Designing a Competency-Based Degree for

Post-Traditional Students at a Private, Nonprofit University

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Nancy A. McDonald

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List of Abbreviations

AACN – American Association of Colleges of Nursing

ACE – American Council on Education

ANSI – American National Standards Institute

CAEL – Council for Adult and Experiential Learning

CBE – Competency-Based Education

COEL – College of Online and Experiential Learning

CPA – Certified Public Accountant

C-RAC – Council of Regional Accrediting Commissions

GED – General Educational Development

HR – Human Resource(s)

HRCI – Human Resources Certification Institute

HSRC – Human Subjects Review Committee

IACBE – International Assembly for Collegiate Business Education

IRB – Institutional Review Board

MOOC – Massive Open Online Course

NPEC – National Postsecondary Education Cooperative

PHR – Professional in Human Resources

PLA – Prior Learning Assessment

RN – Registered Nurse

SHRM – Society for Human Resource Management

WGU – Western Governors University

Abstract

Designing a Competency-Based Degree for
Post-Traditional Students at a Private, Nonprofit University
Nancy A. McDonald
Jennifer H. Adams, Ed.D., William F. Lynch, Ph.D.

Every college wants its graduates to be competent and successful. However, employers often complain that students are ill-prepared for the workforce. To address that issue, competency-based education extends beyond teaching basic knowledge toward enabling individuals to develop the skills and abilities to apply that knowledge. This educational approach may be well suited for post-traditional students—defined by the American Council on Education as learners over 24 years old—who seek career advancement. However, few colleges offer self-paced, competency-based programs that enable working adults to fit education into their busy lives. This qualitative case study examined why one private, nonprofit university decided on particular options for a new competency-based degree for post-traditional students. The conceptual framework for this research focused on the internal and external factors influencing the design of the career-oriented, competency-based programs. The research questions examined the impact of the university's mission, changing regulations, and internal economics and policies on the program design. This single-case design involved five embedded units of analysis at one university: three colleges, the administrative directors, and the executive team. Twenty-five interviews were conducted and three years of meeting minutes, presentations, policy statements, reports, and key correspondences were collected and analyzed. The university wanted a competency-based program to provide its post-traditional students

with a self-paced option. To accomplish that goal, an existing online degree was redesigned into a self-paced, competency-based modality. During the design period, the requirements for regional accreditation and federal student aid continued to evolve for competency-based education. Nonetheless, designing the academics was easier than administrating the self-paced program. When the new degree was piloted, the university found demand for it was uncertain. The student in the pilot dropped out of the competency-based program and switched into a traditional one in the first term. Additional students have not enrolled. The university is now seeking ways to incorporate the convenience of self-paced studies into existing programs, rather than a separate competency-based degree. The recommendations from this study include "start anytime" online courses and progressive micro-credentials that would provide somewhat self-paced options.

Keywords: CBE, competency-based higher education, post-traditional students

CHAPTER 1: INTRODUCTION TO THE RESEARCH

One cannot argue against competence. However, competency-based education (CBE) has been debated for nearly 50 years (Book, 2014; Broudy, 1972; Elam, 1971; Grant et al., 1979; Keller, 1968; Smith, 1973; Smith, 1999; Spady, 1977). The first venture into competency-based higher education that was funded by the U.S. federal government was in 1968 (Burdin & Lanzillotti, 1970). As a result, Smith (1973), in the U.S. Office of Education, took one side in the debate proclaiming "competency-based education and performance-based certification have, perhaps, the greatest promise for effectively and finally meshing theory and reality into an integral, operational program design" (p. vi). However, Spady (1977) of the National Institute of Education argued CBE was a fad that lacked a strong conceptual foundation. Today, after specifying in 2013 how financial aid may be awarded for CBE (IFAP, 2013a), the U.S. Department of Education is encouraging competency-based experiments in colleges and universities to potentially reduce costs and improve educational outcomes (IFAP, 2013b). Disputing the notion that CBE is an experiment, Merisotis (2013) claims a competency-based approach is not an alternative or an exception, but an important shift from a focus on teaching to an emphasis on learning. On the other hand, Slaton (2013) asserts CBE primarily stresses reducing costs, often to the detriment of learning.

The discourse surrounding CBE is complicated by multiple interpretations of this approach for higher education. Grant et al. (1979) explained the curriculum in CBE is based on the requirements of specific roles in society and students must demonstrate their capabilities to perform those roles. Jones and Voorhees (2002) defined CBE in higher education as initiatives by postsecondary institutions to define, teach, and assess

competencies, which they described as the integration of knowledge, skills, and abilities needed for a certain task. The U.S. Department of Education (2015a) has noted there is no official federal definition for CBE programs that use credit hours, however instructional programs that directly assess student learning in lieu of tracking credit or clock hours are defined as direct assessment CBE (U.S. Department of Education, 2015a). Regardless of the specific definition, this approach to higher education generally emphasizes demonstrating the competencies needed in the workplace, rather than spending time in classes to complete a degree (Elam, 1971; Grant et al., 1979; Johnstone & Soares, 2014; U.S. Department of Education, 2015a).

Even though universities with traditional curricula want their graduates to be employable, a poll conducted by Gallup (2013) for the Lumina Foundation found many Americans question whether colleges are really preparing students for the workforce. Furthermore, just 11 percent of the polled business leaders strongly agreed that college graduates had the competencies they want. Consequently, in addition to a traditional college degree, employers often seek supplemental credentials, such as industry certifications, to ensure individuals are capable of doing certain jobs (Adelman, 2000). These industry certifications may become requirements within competency-based degree programs (WGU, 2016b).

The competencies, within CBE, may be defined as the integration of the knowledge, skills, and abilities individuals need to be successful in specific contexts (Jones & Voorhees, 2002). Although the knowledge a person possesses is important, competency-based approaches also emphasize the skills and abilities needed to apply that knowledge. In other words, CBE is not only interested in what individuals know, but

what they can do with that knowledge, and how they do it. The goal of competency-based higher education is establishing explicit and measurable assessment criteria, based on workplace requirements (Elam, 1971; Johnstone & Soares, 2014). One way to accomplish this is to build the certifications sought by employers into the CBE program (WGU, 2016b). In addition, the competency models developed by professional associations may be used to define the knowledge, skills and abilities required for career-oriented degrees. In this way, CBE can link what students learn in college to the requirements for employment (Johnstone & Soares, 2014; Paulson, 2001; Smith, 1999).

Statement of the Problem

Although nearly a third of U.S. undergraduates are over 24 years old (National Center for Education Statistics, 2015), the problem is that few colleges offer alternative approaches, such as self-paced, competency-based programs, which enable working adults to fit education into their busy lives to enhance their career opportunities. Competency-based programs are characterized by self-directed learning grounded in the requirements of the careers to which students aspire (Elam, 1971; Grant et al., 1979; Johnstone & Soares, 2014; Smith, 1999). Since adults tend to be self-reliant and perform better when they understand the real-world context associated with their coursework (Knowles, 1980), CBE could be a good option for adults who want to complete their education. However, as colleges focus on new high school graduates, they often overlook post-traditional students—defined by the American Council on Education as learners over 24 years old—who comprise nearly a third of the undergraduates in U.S. degree-granting institutions (National Center for Education Statistics, 2015; Soares, 2013). Older students are a distinct subset of nontraditional students, because they have

very unique needs (Soares, 2013). For instance, post-traditional students often work full time and have families, making on-campus living and daytime classes unsuitable for them.

Purpose and Significance of the Problem

The purpose of this qualitative case study is to examine why one private, nonprofit university decided on particular approaches for a new self-paced, competency-based program for post-traditional students seeking career-oriented degrees. For colleges and universities that want to offer post-traditional students the option of a competency-based approach, there are an array of different ways to design a degree program (Eduventures, 2015; Whitman, 2015). However, the requirements for accreditation and qualifying for federal student aid continue to evolve for CBE programs. For instance, in a joint statement, the U.S. regional accreditors specified institutions offering a CBE program for the first time must go through a substantive change review process (Council of Regional Accrediting Commissions, 2015). Prior to the joint statement from the accrediting authorities, the Higher Learning Commission (HLC) that accredits institutions in the central U.S. region had already approved some competency-based programs without conducting a substantive change review (Whitman, 2015). The Office of the Inspector General for the U.S. Department of Education recommended the HLC inform any institutions accredited without a substantive change review that they must immediately cease distributing federal aid to students in CBE programs (Whitman, 2015). This recommendation from the Inspector General's office was based on two separate audits that were critical of the way competency-based programs had been accredited (Howard, 2014; Whitman, 2015).

Given the complexity of designing a competency-based degree that meets accreditation and federal student aid requirements, one key decision revolves around how students progress through the curriculum. Online CBE programs are often self-paced, which potentially enables experienced adults to complete their degrees faster by building on what they already know (Kamenetz, 2013). However, working students may not have the time or discipline to tackle their studies at an accelerated rate (Grant et al., 1979; Kelchen, 2015; Mendenhall, 2003). In addition, a self-paced approach may be difficult to implement within a traditional university with existing policies, procedures, and information systems designed to support classes beginning and ending on a fixed schedule (Grant et al., 1979; Hurst, 2013). Both faculty members and students may be hesitant to adopt a self-paced approach (Grant et al., 1979). In addition, the requirements for accreditation and qualifying for federal student aid may be a moving target for self-paced CBE programs, especially when the requisite measurement of a student's satisfactory academic progress is not based on credits earned in fixed-length academic terms (IFAP, 2013a; IFAP, 2014; Muir & Goldstein, 2014; U.S. Department of Education, 2015a). Finally, to avoid being classified as a correspondence program under federal law, postsecondary institutions must show there is regular and substantive interaction between faculty and students in self-paced programs (Howard, 2014; Whitman, 2015). Despite the many challenges with online, self-paced CBE, the university in this study selected that option.

The decision to use a self-paced approach has many significant implications. Because post-traditional students may have developed a broad array of skills and abilities through their work or military experiences, self-paced CBE degree programs enable

students to bypass or proceed quickly through subject matter they already know (Elam, 1971; Johnstone & Soares, 2014). This saves precious time for busy, working adults, and it accelerates progress toward a degree, an important factor in persistence through graduation (Complete College America, 2011). A self-paced approach also allows learners to move more slowly through new material. As Bloom (1984) pointed out, if students are forced to progress in courses at an average rate, there should be no surprise if the results across the class are average. However, in self-paced programs, if individuals can take the time they need to truly master the subject matter, superior outcomes are possible.

Providing a way for post-traditional students to complete their education is important because, in a globally competitive world, the United States is 12th out of the 44 countries in the analysis by the Organisation for Economic Co-operation and Development of college attainment rates for adults 25-34 years old (OECD, 2016). The United States fares better for individuals over 34 years old with a college degree, but still trails other countries (OECD, 2016). For the United States to catch up, more post-traditional students must complete their education. In a sample of over two million U.S. undergraduates, tracked by the National Student Clearinghouse, nearly 60 percent of those who started college by age 20 graduated within six years. However, the rates for post-traditional students were more than 15 percentage points lower and still lagged behind eight years after initial enrollment (Shapiro, Dundar, Yuan, Harrell, & Wakhungu, 2015). Clearly, changes are needed to improve the success rate for post-traditional students.

In addition to potentially improving the graduation rates of post-traditional students, there is renewed interest in CBE because the U.S. Department of Education has begun to authorize student financial aid for colleges that use competency-based direct assessments of student learning in lieu of tracking credit hours (IFAP, 2013a). By April 2015, two years after the change was announced, five universities with CBE degree programs (Southern New Hampshire University, Capella University, University of Wisconsin, Brandman University, and Walden University) had qualified for federal student aid under the new direct assessment guidelines (Book, 2014; Brandman University, 2014; Fain, 2015; Herzog, 2014b; Walden University, 2015). A 27-credit competency-based certificate from Texas State Technical College was also approved for federal funding (Inside Higher Ed, 2015). In addition to offering a direct assessment option, the U.S. Department of Education is encouraging institutions to experiment with new models to potentially reduce the cost of higher education and improve educational outcomes (IFAP, 2013b). This has resulted in many colleges starting to develop competency-based programs (DeSantis, 2014a; DeSantis, 2014b; Kelchen, 2015; Klein-Collins, Ikenberry, & Kuh, 2014). Additionally, many colleges offer some form of competency-based assessment for prior learning (LearningCounts, 2016). Although federal student aid is not normally available to pay for prior learning assessments (PLAs), the U.S. Department of Education is permitting experiments with funding competency-based PLAs to help students complete their degrees more quickly (U.S. Department of Education, 2014). Despite initial excitement about CBE, it took the federal government a full year to clarify the requirements for these competency-based experiments (U.S. Department of Education, 2015b).

As will be discussed in the next chapter, it is important to note CBE was extensively evaluated and largely abandoned for higher education in the United States in the 1970s, partially due to the burden of administering self-paced programs (Kay & Massanari, 1977). However, online technology, learning management systems, adaptive course software, and computerized, intelligent tutors were not available then. These technological advancements could help alleviate the administrative problems associated with self-paced programs and enable students to learn material more independently (D'Mello & Graesser, 2013; Irakliotis & Johnstone, 2014; VanderArk & Schneider, 2012). For instance, in the 1970s, instructors in self-paced programs had to develop paper-based individualized lesson plans for each student and grade everything from simple math problems to spelling errors by hand. Furthermore, self-paced programs required instructors to provide feedback quickly to avoid slowing down the students. Now, online learning modules can enable students to move through the material at their own pace. Tutoring software does not totally replace instructors, but it can provide guidance for learners (D'Mello & Graesser, 2013). In addition, some types of assessments, such as computerized tests, can be graded automatically without burdening the instructor. Although technologies may enable students to learn at their own pace, several institutions implementing CBE have found their existing enrollment and financial aid systems were not designed for self-paced students (Hurst, 2013; Nodine & Johnstone, 2015; Public Agenda, 2015). Nonetheless, Weise (2014) noted even though online technology, CBE, and workforce training are not new, integrating the three into a coherent approach could disrupt traditional higher education.

Given that competency-based education may be a disruptive force in postsecondary education, universities such as Western Governors, Southern New Hampshire, and Northern Arizona have designed their competency-based degrees from the ground up as entirely new programs (Mendenhall, 2003; NAU, 2012; Parry, 2013). Western Governors University was initially funded by more than 10 states to offer CBE degrees (WGU, 2016e). Southern New Hampshire and Northern Arizona University received grants of one million dollars each to create their CBE programs (Boutselis, 2012; NAU, 2012). The University of Wisconsin system was allocated eight million dollars for several new CBE degrees (Herzog, 2014a). Like the university in this case study, many institutions do not have million-dollar grants to implement CBE. This case study found designing a new competency-based undergraduate degree without significant start-up funding was possible, but implementing the self-paced aspects of CBE was harder. Furthermore, once the competency-based degree was offered, the university in this case found there was little interest from students and employers in the new degree. Therefore, this research may provide important lessons for other institutions contemplating CBE programs.

The audience for this research includes educators who might better understand the complexities of implementing CBE programs. College administrators may benefit by learning about the difficulties of implementing a self-paced program. In addition, other colleges at the university in this case study may be able to incorporate what was learned from this research into their programs. Employers may also be interested in how higher education is trying to respond to their expectations with CBE, potentially ushering in a

new wave of community-university partnerships. Finally, policy makers, both advocates and detractors of CBE, could begin to appreciate the role it has in higher education.

Research Questions

The overarching question for this research is: Why is a private, nonprofit university deciding to design self-paced CBE programs in a particular way as an option for post-traditional students seeking career-oriented degrees? Weise (2014) asserted CBE requires the right business model, as well as the right academics. Since CBE may involve broad changes across the institution (Houston, 1974b; Weise, 2014), this case study will examine both the internal and external factors influencing the design and implementation of the competency-based program. The specific research questions are:

1. How does the mission of the university, to provide open access to career-oriented degree programs for adults of all ages, influence the decisions associated with offering CBE?
2. How is the regulatory environment impacting decisions related to the design of the new CBE degree programs?
3. How do the internal economics and policies of a private, nonprofit university affect the program content, design, and implementation decisions of a CBE program?

Conceptual Framework

The ontological paradigm for this research is constructivism, which assumes social phenomena evolve from the experiences of the social actors (Grix, 2002). This paradigm is particularly relevant because the underlying principles of CBE have been implemented in various ways at different institutions. The epistemological position for

this research is interpretive, which presumes knowledge is subjective based on an individual's interpretation (Grix, 2002). An interpretive approach is applicable since past experiences with competency-based training programs in the corporate environment have helped to inform the researcher's understanding of CBE in higher education. The conceptual map for this research, shown in Figure 1, looks systemically at the creation of new CBE degrees for the university in this case study by examining: (a) the university's operating model, (b) the standardized requirements for professional careers, (c) the principles of CBE, and (d) the regulatory environment. The university's mission to provide open access to career-oriented degree programs at an affordable price for adults of all ages, especially post-traditional students, was a key factor in the decision to implement CBE. Therefore, in the conceptual map the mission and other components of the operating model are shown driving the design of the CBE degree. The principles of CBE, in the conceptual map, provide the foundation on which new competency-based programs should be designed. The horizontal axis in the map depicts the external CBE design constraints. If the degree is intended to qualify for federal student aid, the CBE program must satisfy the requirements of the regulatory environment for higher education. When CBE degrees are career-oriented, the design of the academic program must meet the requisites for entry into professions. Additional details on the conceptual map are provided below after clarifying the researcher's stance.

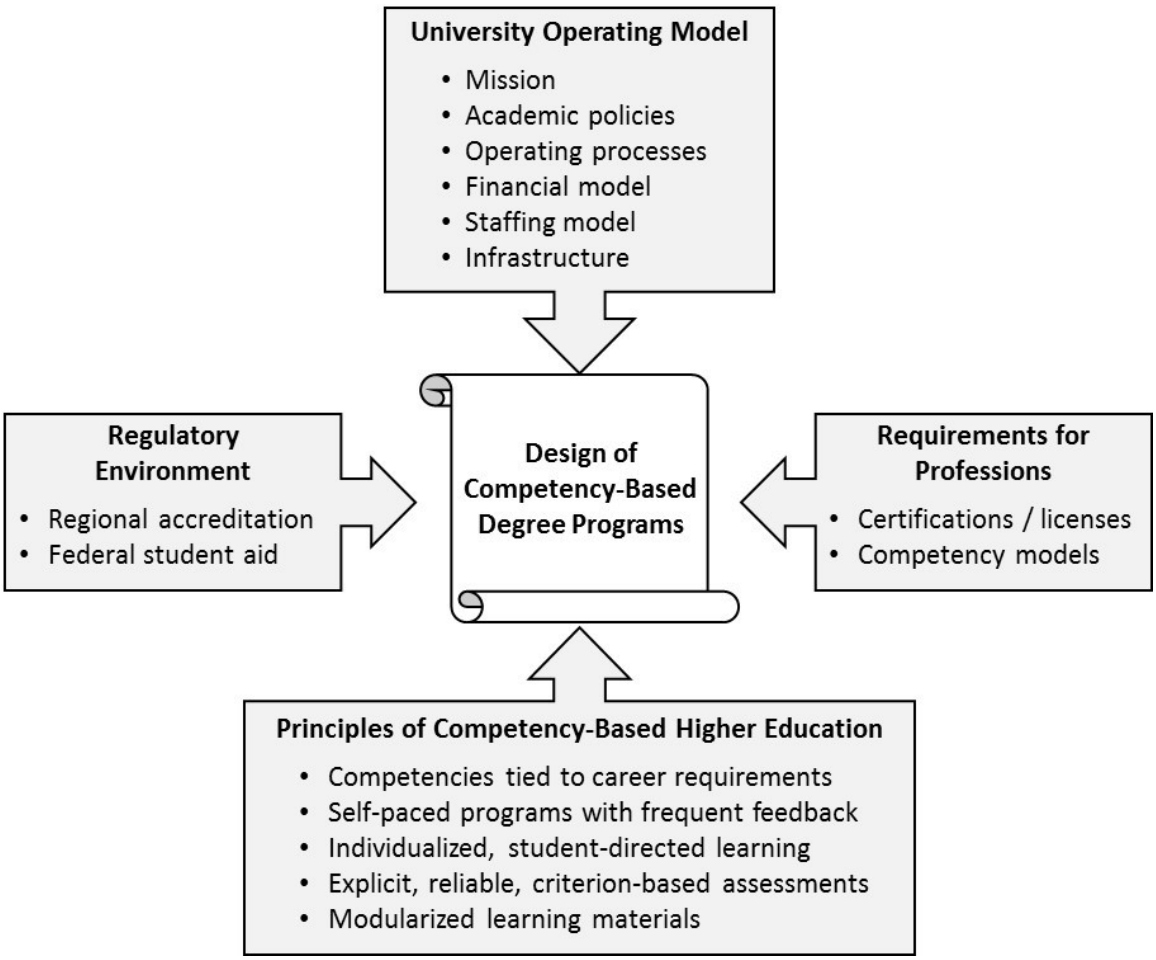

Figure 1. Conceptual map showing systemic factors. The factors influencing the design of the competency-based degree programs.

Researcher's Stance and Experiential Base

Before entering higher education, I worked in information technology and was a senior executive responsible for two nine-month competency-based corporate training programs involving 300 professionals. Like competency-based approaches in higher education, all of the corporate students had individualized, online learning plans. Although the learning was self-paced, the students had to demonstrate their new competencies based on certain milestones set by their employer. Individuals who missed the milestones might be dropped from the program or released from the company.

Therefore, the stakes were high for the corporate students to stay on track. These students, who already had undergraduate degrees, worked on their competencies full time making the nine-month corporate training programs equivalent to two additional college semesters. To complete an entire four-year degree in a self-paced mode, I believe individuals must be highly motivated and that strong support systems must be in place for college students. However, students may have the option of completing part of their degree using self-paced direct assessments, because in June 2015 the Council of Regional Accrediting Commissions announced hybrid CBE approaches would be allowed (Council of Regional Accrediting Commissions, 2015). I believe hybrid programs that enable students the choice of traditional classes or self-paced learning modules for different parts of their degree programs are likely to be the norm for post-traditional students with relevant work experience.

As a researcher, I chose to examine competency-based higher education because of my prior experience in information technology and corporate competency-based training. Because CBE is generally provided online, I hoped to combine my background in technology with my second career in higher education. CBE certainly has potential. However, I do not believe learning that is entirely self-paced is the right fit for every student. Nonetheless, I am keeping an open mind regarding self-paced learning, and I am eager to see how CBE evolves over the next decade or so.

Conceptual Map

The design of CBE programs involves many internal and external factors. For instance, Weise (2014) asserted CBE requires more than the right learning model and technologies, it also entails the right customers and business model. Klein-Collins (2013)

explained CBE can be implemented in various ways: (a) embedding competencies in existing courses, (b) redesigning the entire curriculum around competencies while retaining credit hours, or (c) using direct assessment of competencies in lieu of credit hours. As shown in Figure 1, the study's conceptual map illustrates the influence of internal and external factors in the design and implementation decisions for the new CBE program. The conceptual map includes: (a) the university operating model, (b) the requirements for entry into professions, (c) the principles of competency-based higher education, and (d) the regulatory environment for higher education.

The university's operating model is key to the design of the CBE program. Christensen and Eyring (2011) argued universities should not emulate each other, but find their own unique operating models based on their specific missions. The university in this case study has done that by providing open access to cost-effective, career-oriented degrees for adults of all ages, especially post-traditional students. The institution keeps tuition affordable and offers courses at times convenient for working students, such as online and evening classes. Since 95 percent of the university's revenue comes from tuition and most undergraduates are post-traditional students (*Our Story Unfolds*, 2015), the institution wants to offer new and innovative programs for working adults to attract additional students and ensure continuity of its operating income. Furthermore, because the vast majority of its students receive federal financial aid (*Our Story Unfolds*, 2015), the university must comply with the federal regulations for aid. To keep tuition affordable, the university controls costs by using adjunct instructors. About 90 percent of the faculty are part-time instructors who work full time as professionals in the disciplines in which they teach.

Competency-based higher education is a way to link college curricula with requirements for employment (Johnstone & Soares, 2014; Paulson, 2001; Smith, 1999). Therefore, the standard requirements for entry into professions that require a degree is part of the conceptual map. Linking curricula with skills needed in the workplace is particularly important for career-oriented degrees. The competency models developed by professional associations and the certifications and licenses sought by employers can be built into CBE programs. In this way, career-focused programs can help ensure their graduates have the right qualifications for employment.

The principles of competency-based higher education provide the foundation on which to build a CBE degree program. Although there is no single definition of CBE, the conceptual map combines the enduring principles of CBE first articulated in the 1970s (Elam, 1971) with those that have been become the basis for more recent CBE implementations (Johnstone & Soares, 2014). The academic decisions made in the design of competency-based programs for higher education should be based upon the principles of CBE.

The last component of the conceptual map is the regulatory environment for higher education. If institutions want their CBE programs to qualify for federal student aid, several criteria must be met (Council of Regional Accrediting Commissions, 2015; IFAP, 2013a; IFAP, 2014). The U.S. regional accreditors stated competency-based programs may use credit hours, direct assessments, or a hybrid of the two (Council of Regional Accrediting Commissions, 2015). However, the definition of hybrid programs is open to interpretation. The U.S. Department of Education categorizes programs that are eligible for federal student aid as campus-based, distance education, or

correspondence programs (Whitman, 2015). Although campus-based and distance courses can qualify for the same federal student aid, funding for correspondence courses is limited because there is no regular and substantial interaction with instructors (Whitman, 2015). This lack of interaction with instructors can present a problem for CBE programs that are self-paced and do not involve faculty-led classes. The guidance from the federal government and the regional accreditors has continued to evolve complicating the design of CBE programs. Although state governments are typically part of the regulatory triad for education (Brittingham, 2009), in this case study the State did not play a role and was not included in the map.

Definition of Terms

Competency-based higher education represents an approach that is considerably different from traditional postsecondary education. In Appendix A is the terminology used for CBE for the purposes of this study. In addition, the terms used in this document related to adult learning are in the appendix.

Limitations

This research focused on the implementation of the first competency-based degree program at a specific private, nonprofit university. As with any first-time initiative, lessons have been learned that will change subsequent implementations. This university also has a unique approach to higher education. All of the degree programs are career-focused, and most courses are taught by adjunct instructors who work full time in the disciplines in which they teach. Post-traditional students, many of whom already are working, are a large part of the student body, and most undergraduates at this university attend part time. Tenure is not an option at this university, so some of the cultural change

issues at institutions with large, tenured staffs may not apply (Grant et al., 1979; Nodine, 2016). Furthermore, because the degrees are career-focused, and the students are post-traditional, a competency-based approach may be more compatible with the existing academic programs at this institution than it would be at a more traditional university. Thus, the findings of this case study may not be applicable to all university settings, but should provide insights into the decisions required to implement self-paced, competency-based undergraduate degree programs.

Summary

Self-paced CBE is a significant change for institutions of higher education (Houston, 1974b; Weise, 2014). It involves switching from fixed-length classes, which are scheduled in specific terms, to modularized learning materials that students can begin when they want and tackle at their own pace (Mendenhall, 2003). Although CBE was tried in the United States in the 1970s (Grant et al., 1979), it fell out of favor for reasons that will be discussed in the next chapter. To be successful, Weise (2014) asserted competency-based higher education requires the right business model and targeting the right customers, in addition to the right learning approach and technologies. Implementing CBE has broad implications beyond the curriculum, and universities face many challenges when converting existing degree programs to a competency-based approach (Grant et al., 1979). The university in this case study found it was easier to design the academics for a competency-based program than it was to implement a self-paced program using its existing student information and financial aid systems. Furthermore, the university assumed it had targeted the right customers for its CBE program and was surprised when post-traditional students and employers expressed little

interest in the newly created degree. This case study explored why one private, nonprofit institution made certain choices in the design of a new CBE initiative and the outcomes that resulted from those decisions.

CHAPTER 2: LITERATURE REVIEW

Introduction

Americans overwhelmingly believe higher education is important for career success (Gallup, 2013). The Bureau of Labor Statistics (2016) reported U.S. workers with an associate's degree had median weekly earnings in 2015 that were 18 percent higher than those workers with only a high school diploma; individuals with a bachelor's degree earned on average 68 percent more than high school graduates who did not pursue further schooling. Furthermore, people with a postsecondary education were much less likely to be unemployed (Bureau of Labor Statistics, 2016). Therefore, many adults without a degree understand the value of completing college—the result is, nearly a third of the undergraduates in U.S. degree-granting institutions are post-traditional students, over 24 years old (National Center for Education Statistics, 2015). Competency-based education (CBE) may be well-suited for post-traditional students because it shares common attributes with adult learning preferences, such as a student-directed approach and an emphasis on task-oriented assignments (Pratt & Nesbit, 2000). However, in addition to a college credential, professional certifications and licenses are required in many career areas (Adelman, 2000). Therefore, to satisfy the needs of both employers and career-focused students, CBE programs may incorporate requirements for certifications and licenses into their degrees.

The literature review focuses on three streams: (a) standardized requirements for entry into professions that require a degree, (b) adult learning preferences for post-traditional students, and (c) competency-based higher education. The first stream, requirements for entry into a profession, is grounded in the work of McClelland (1973)

and Adelman (2000). McClelland (1973) argued employers should stop using intelligence tests to screen applicants and instead use assessments to gauge the applicant's competence to perform a job. Adelman (2000) noted professional licensure and certification processes that included a demonstration of skills and abilities, as well as an exam to assess knowledge, were required by some employers. The second stream in the literature review examines the learning preferences of post-traditional students. Knowles (1970) spent decades studying learning environments for adults. Out of that research came a set of principles to describe the ways in which post-traditional students seem to learn best (Knowles, Holton, & Swanson, 2011). Competency-based higher education, the third stream, provides an alternative to traditional degree programs. The underlying principles of CBE were described in major works by Elam (1971) and Houston (1974a). Jones and Voorhees (2002) provided a theoretical framework for CBE for the 21st century.

The three streams for the literature review are depicted on the next page. The first and second streams: (a) standardized requirements for professions and (b) adult learning preferences, overlap with the design of CBE for career-oriented degrees for post-traditional students. The competency models developed by professional associations and professional licensure / certification assessments can be the basis for the competencies and summative assessments in CBE degree programs. The learning preferences of adults should drive the design of the formative assessments and learning materials for post-traditional students. In addition, the third stream, competency-based higher education incorporates not only the academic requirements, but also the strategic and operational considerations for designing self-paced, competency-based degree programs.

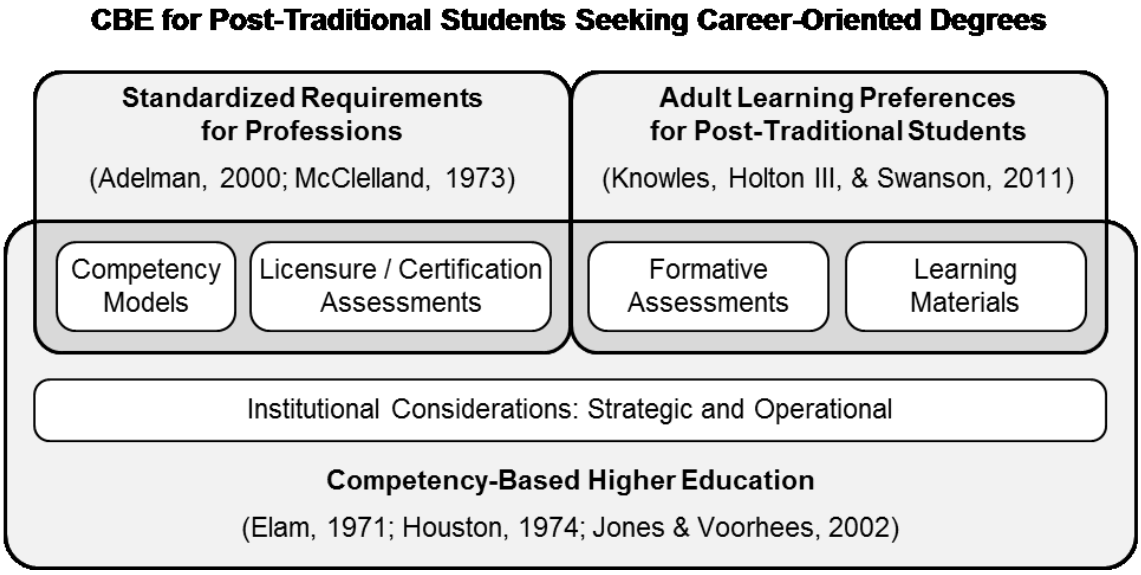

Figure 2. Map showing three overlapping streams. The competency models and licensure / certification assessments, associated with entry into professions, can be adopted to become the competencies and summative assessments in career-oriented CBE programs. Likewise, adult learning preferences should drive the design of formative assessments and learning materials for post-traditional students. The institutional considerations include the strategic decisions associated with choosing a competency-based approach and the operational changes required when classes are replaced with self-paced learning as part of CBE programs.

Standardized Requirements for Professions

Employers want to know that job applicants are capable of being successful in the positions they seek. McClelland (1973) advocated for using criterion sampling to screen candidates. For instance, to assess a person's capability to drive an automobile, a written exam evaluates the individual's knowledge of the regulations, and a road test gauges abilities behind the wheel. McClelland maintained the same approach should be used to judge a person's competence to perform a job. Since it is often not practical to "road test" every prospective employee, licensure, registration, and certification processes are a way to improve the hiring success rate for employers (Adelman, 2000; Goudreau &

Smolenski, 2008; Gourley, Fitzgerald, & Davis, 1997; Lengnick-Hall & Aguinis, 2012). Although a certified public accountant (CPA) is one of the most well-known industry-specific certifications (Carrington, Harwell, & Morris, 2011; Cory & Huttenhoff, 2011), the U.S. Department of Labor indicates over 1000 occupations in more than 300 industries have some form of certification (CareerOneStop, 2016). To satisfy the requirements of employers, industry certifications or state licenses can be specified as part of the CBE degree requirements.

In addition to certifications and licenses, some professional associations have developed models of competencies (AICPA, 2016; IBSTPI, 2016; SHRM, 2016b). These models typically specify the knowledge, skills, and abilities required for entry into a profession, and may include expected competencies for advancement. There are often related certification processes to assess that an individual possesses the requisite knowledge, skills, and abilities. However, even if a college decides to use an existing competency model developed by an industry or professional group, instead of creating its own, the competency model still has to be adapted to a particular academic curriculum. Additionally, given there are many different types of certifications and licenses that might be applicable to a degree, the deans and academic chairs must carefully consider which ones to potentially incorporate into CBE programs. The next subsection goes into more detail regarding certifications, licenses, and registrations. Then, the following subsection addresses competency models for specific professions.

Certifications, Licenses, Registrations: A Parallel Postsecondary Universe

Adelman (2000) warned that certifications are a "parallel postsecondary universe" (p. 5). Indeed, both college degrees and certifications are forms of credentials meant to

imply some level of knowledge or expertise (Adelman, 2000; Goudreau & Smolenski, 2008; Gourley et al., 1997; Lengnick-Hall & Aguinis, 2012). However, there is no consistency across industries issuing certifications, and as Adelman (2000) noted, some of these credentials are suspect, if the issuing body has no accreditation.

Certifications are issued by industry groups, professional associations, and private businesses, unlike licenses and registrations that are granted by governmental bodies (Adelman, 2000; Goudreau & Smolenski, 2008). Certifications from private businesses may be associated with expertise regarding the use of specific products. On the other hand, certifications from industry groups and professional associations tend to specify the broad requirements for entry into a profession or for achieving a certain level of accomplishment or specialization within one's career (Adelman, 2000; AICPA, 2016; IBSTPI, 2016; SHRM, 2016a). As Gourley et al. (1997) explained, certifications are not to be confused with certificate programs or certificates issued by colleges and universities, which are typically a bundle of courses less than a degree. The system for accrediting organizations that issue certifications is completely separate from the structure for accrediting colleges and universities (ANSI, 2016a; ICE, 2016b). To be clear on the terminology: credentials such as licenses and certifications, like college degrees, are awarded to individuals; accreditation applies to organizations issuing credentials (Goudreau & Smolenski, 2008). The American National Standards Institute (ANSI) currently accredits about 50 industry and professional groups that issue certifications (ANSI, 2016a). In addition, ANSI accredits standards developers (ANSI, 2016b), one of which is the Institute for Credentialing Excellence (ICE, 2016a). This

institute also accredits certifying bodies (ICE, 2016b). However, not every organization issuing a certification is accredited.

Licenses are issued by governmental bodies to indicate that an individual has met the minimum requirements to practice and are generally required for professions where the safety or welfare of the public needs to be protected (Goudreau & Smolenski, 2008; Gourley et al., 1997; Lengnick-Hall & Aguinis, 2012). Registrations are similar to licenses, because they are issued by government agencies; but, unlike licenses, they may not be compulsory (Nikraz & Yadav, 2012). Since licenses and registrations are issued by governmental bodies, they are generally only valid in the jurisdictions in which they are awarded, and licensing requirements can vary significantly (Goudreau & Smolenski, 2008). Individuals in professions, such as nurses, engineers, and lawyers, may have to be registered or licensed in each state in which they work. As noted by Goudreau and Smolenski (2008), the process for becoming credentialed to practice may be complicated for new graduates, as well as seasoned professionals. The question of jurisdiction is simpler for certifications because they are generally applicable nationally, and sometimes internationally (Lester, Mencl, Maranto, Bourne, & Keaveny, 2010). MeasureUp (2016), for instance, offers practice certification exams worldwide. Licenses are mandated by the state to practice. Getting certified is voluntary, but may be required by employers to be hired.

Certifications can be used when licenses are not mandated to practice or used to demonstrate additional expertise, above and beyond licensure requirements, in certain areas such as medical specialties (Gourley et al., 1997). However, Lommel (2013) described various issues with certifications. If certifications are offered by particular

businesses, individuals may need different certifications for various products from the same company, as well as certifications from multiple companies (Adelman, 2000). Businesses may give a certificate for merely attending a paid workshop. Another use of certifications may be to restrict the number of people in a field. In addition, certifications may assess knowledge, skills, and abilities that are irrelevant to the requirements of a profession. Finally, certifications may be too rigorous, thereby excluding qualified candidates, or not rigorous enough (Lommel, 2013). Given these issues, one might wonder why employers seek individuals with certain certifications. Lommel (2013) asserted employers do so because they do not have the capabilities themselves to evaluate candidates seeking jobs. Certifications are popular with professionals because they are generally accepted nationally, whereas licenses and registrations are applicable only within the governmental jurisdiction in which the credential is issued (Goudreau & Smolenski, 2008).

Certifications can be coupled to college degree programs. Cory and Huttenhoff (2011) noted most undergraduate accounting degrees are oriented toward the requirements of becoming a CPA. However, only about a third of the accounting graduates become CPAs because an accountant can work in a nonpublic capacity without being certified (Carrington et al., 2011; Cory & Huttenhoff, 2011). Cory and Huttenhoff recommended colleges and universities offer options in the accounting curricula for students who do not want to be CPAs. On the other hand, some institutions, such as Regents (now Excelsior) College, award course credit for particular certifications (Adelman, 2000). In addition to that practice, Western Governors University also incorporates earning certifications into the process of obtaining a degree (WGU, 2016b;

WGU, 2016f). This is a way for the degree to have credibility with employers who want new hires to be certified. However, Lengnick-Hall and Aguinis (2012) found in the human resources (HR) profession that obtaining the Professional in Human Resources (PHR) credential from the HR Certification Institute was of greatest benefit to those who did not have a degree. Lester et al. (2010) reported graduates with degrees in HR management were more likely to be hired if they also had the PHR certification, but the jobs requiring the credential did not offer higher starting salaries. Furthermore, having the certification did not have a significant impact on the likelihood that individuals would receive more promotions during their careers (Lester et al., 2010). One can conclude that, although businesses may use the credential to screen unknown applicants, there are better ways to determine the abilities of individuals once they are on the job than through certifications by outside agencies.

Competency Models

In addition to offering certifications, some industry and professional associations have developed competency models to further define the requirements for their professions (AICPA, 2016; IBSTPI, 2016; SHRM, 2016a). Competency models are intended to describe the spectrum of capabilities required to be successful in a particular field (AICPA, 2016; IBSTPI, 2016; SHRM, 2016a). The International Board of Standards for Training and Performance Instruction defined competencies as the integrated skills, knowledge, and attitudes needed to accomplish tasks within specific occupations (IBSTPI, 2016). The Society for Human Resource Management maintained competencies include knowledge, skills, and abilities plus individual characteristics, such as self-image, traits, mindsets, feelings, and ways of thinking, which were appropriate for

certain roles to attain desired results (SHRM, 2016a). The American Institute of Certified Public Accountants specified three types of competencies: functional, personal, and broad business perspective competencies (AICPA, 2016); accountants need to be competent in the accounting function, must have certain personal capabilities, and are required to have an overall understanding of business. For nurse managers, the Human Capital Competencies Inventory instrument identified five human resource competencies: developing themselves, developing others, recruiting new nurses, managing personnel, and retaining staff members (Donaher, Russell, Scoble, & Jie, 2007).

The competency model developed by the Society for Human Resource Management is particularly interesting given the complexity of the HR profession. The model went through 10 versions between 2000 and 2012 (SHRM, 2012) and currently identifies nine broad competency areas (SHRM, 2016b). Within each area, there are different competency requirements for entry level, mid-career, senior professional, and executive roles (SHRM, 2016a). The Society for Human Resource Management also recognizes that small businesses have very different needs from those of large ones; and, companies that operate in one locale have HR requirements that are simpler than those of multinational enterprises (SHRM, 2016a). For instance, businesses with international operations must be aware of the employment laws in each country and local jurisdiction in which they have personnel (Lee, 2011). In addition, HR managers must understand the different cultural norms that vary widely across the globe. It should be noted neither the legal requirements, nor the social norms, are static. Therefore, HR policies must be frequently reviewed and updated. Likewise, the competencies required in the HR profession continue to evolve (SHRM, 2012). A CBE curriculum based on the

competency model from the Society for Human Resource Management would have to be updated as the required competencies change.

Summary: Standardized Requirements for Professions

In addition to a degree, employers often seek further evidence that an individual will be successful on the job, because those who do well in school do not necessarily excel in the workplace. Certifications from professional associations or licenses from state boards provide additional substantiation, beyond a college credential, that an individual is knowledgeable in a particular field. Competency models are a way to describe the expected skills and abilities, in addition to knowledge areas, for entry- and higher-level positions. The competency models developed by industry groups can be adopted as the competencies within career-oriented degrees. Furthermore, certifications and licenses can become the summative assessments required for graduation. However, in addition to summative assessments, colleges must provide formative assessments and learning materials to enable students to master new subjects. In CBE, this often involves projects or portfolios grounded in true-to-life scenarios (Cambridge, 2008; Jiang, Parent, and Easmond, 2006; Johnstone & Soares, 2014; Mendenhall, 2003; Peinovich, Nesler, & Thomas, 1997). These types of educational activities are consistent with the learning preferences of post-traditional students (Knowles et al., 2011), as discussed in the next section.

Adult Learning Preferences

Merriam, Caffarella, and Baumgartner (2006) asserted Knowles' andragogy is the most well-known theory for adult learning. For decades, Knowles (1980) researched the learning preferences of adults, which he termed andragogy to distinguish adult learning

from pedagogy that has its linguist roots in the instruction of children (Knowles et al., 2011). Although Knowles was the most well-known author on the subject of adult learning, he was not without his critics (Knowles, 1980). When Knowles published *The Modern Practice of Adult Education: Andragogy versus Pedagogy* in 1970, it appeared he was positioning andragogy as an alternative to pedagogy. He later described andragogy as part of a spectrum of learning styles and noted as individuals mature their styles change (Knowles et al., 2011). He also admitted his theory was focused on the adult learner and it was not a defining framework for adult education, as might have been implied by the use of the term andragogy. Merriam et al. (2006) agreed andragogy described assumptions about adult learners, but it was not a complete theory.

The theory of constructivism is often applied to adult learners (Kolb, 1984; Leonard, 2002), because as Knowles et al. (2011) noted, much of the constructivist's philosophy of knowledge creation reflects the learning styles associated with andragogy. Constructivism is a theory that asserts understanding is gained through experiences within one's environment, and it focuses on how people construct knowledge by interpreting their observations (Jonassen, 1991; Savery & Duffy, 1996). Social constructivism incorporates the social aspects of people learning together and testing interpretations with one another (Savery & Duffy, 1996). However, as defined by Knowles et al. (2011), andragogy is focused more on the individual. Chaves (2010) called andragogy a form of individual constructivism. Since there is a spectrum of theories of how individuals construct knowledge that fall under the umbrella of constructivism, this section will not attempt to cover the breadth of constructivism, but will focus on how the concept is applied to instructional design for adult learning. The

following subsections explore andragogy and constructivism in the context of designing learning materials for post-traditional students.

Andragogy

In 1926, Lindeman laid the groundwork for adult learning theory (Knowles et al., 2011). He emphasized adult education should relate learning to the experiences of the student, not impart knowledge out of context (Lindeman, 1926). Education for adults should not be organized into discrete subjects, but rather different topics should be integrated, as needed, into the problems and situations adults need to address (Lindeman, 1926). Lindeman's theory was based on the earlier of work of Dewey who asserted children are motivated to learn by solving their own problems (Knowles et al., 2011). Building on the work of Lindeman, Knowles studied adults in corporate training classes and asserted adults learned best in an environment less structured than the traditional college setting (Knowles et al., 2011). Knowles continued to expand his theory of adult learning, which now includes six elements: "(1) the learner's need to know, (2) self-directed learning (SDL), (3) prior experiences of the learner, (4) readiness to learn, (5) orientation to learning and problem solving, and (6) motivation to learn" (Knowles et al., 2011, p. 181). Each of the six characteristics are described in more detail below.

The learner's need to know.

Adults need to know why something is important enough to be learned (Knowles et al., 2011). They also are interested in what will be learned and how. Because of that, adult students may participate in planning and facilitating the learning. For instance, mid-course feedback may be used to change the actual direction of the class, not just to inform instructors about how they are perceived. Harper and Ross (2011) found adult

learners also liked to know how much was required to cross the finish line. To help students understand that, Capella University has created a dashboard that shows in a graphical format how much of a self-paced CBE program has been completed, and how much is left to be done (Kamenetz, 2013).

Self-directed learning.

Knowles et al. (2011) believed self-directed learning is important for adults because they are used to making their own decisions and dislike situations where they lack control (Knowles et al., 2011). Knowles et al. hypothesized that the high drop-out rate among older undergraduates may be due to rigid educational systems, which impose restrictions that frustrate adults who were used to controlling their own destinies. Knowles et al. (2011) contended that self-directed learning means being accountable for one's own educational goals; it did not necessarily mean self-study. The authors stated students can fall into four categories: (a) dependent learners who passively take directions from the instructor, (b) interested learners who are motivated to set their own learning goals, (c) involved learners who work as equals with other students and the instructor, and (d) self-directed learners who work in independent study groups or individually. Jiang et al. (2006), however, found only a fraction of students in a CBE master's program were truly self-directed learners. Knowles et al. (2011) acknowledged that individuals, who have been conditioned by their prior educational experiences to take a passive approach, may need encouragement to assume control of their own learning.

Prior experiences of the learner.

Adult students bring a wide range of experiences that should be acknowledged and incorporated into the educational environment (Knowles et al., 2011). A diversity of

backgrounds may be a valuable asset as individuals learn from each. In addition, a student's identity and self-confidence, or the lack there of, may be tied to prior experiences. Knowles et al. (2011) maintained that an adult's background can color new learning, either enhancing it or inhibiting the ability to accept new perspectives. This concept, that learning is shaped by one's experiences, is consistent with the constructivist's view of knowledge acquisition (Knowles et al., 2011; Jonassen, 1991; Savery & Duffy, 1996).

Readiness to learn.

Adults are generally ready to learn, when they have a specific need to know something (Knowles et al., 2011). This was a principle first articulated by Lindeman (1926). Much of Knowles' theory is based on studies of organizational training within companies (Knowles et al., 2011). Clearly, if employees need additional expertise to be successful on the job, they will be motivated to learn. When the Kentucky Community and Technical College System developed an online program for associate's degrees called Learn on Demand, they found students were more likely to enroll in just what they needed to know immediately, instead of completing an entire degree, which is consistent with the readiness to learn principle (McCall, 2013).

Orientation to learning and problem solving.

Post-traditional students want education that is concerned with real-world situations, not compartmentalized in unrelated subject areas (Knowles et al., 2011; Lindeman, 1926). Building on the learning models of Lewin, Dewey, and Piaget, Kolb (1984) described experiential learning as a cycle having four phases: (a) specific experiences, (b) reflective observations, (c) formulation of generalizations and

abstractions, and (d) evaluation of precepts in new situations. Kolb's model implies that students learn through case studies, real-world situations, and on-the-job experiences. This is consistent with and helps to inform an understanding of the learning styles of adults (Knowles et al., 2011). In support of the applicability of Kolb's model for adult learning, Marschall and Davis (2012) reported they were able to adapt the model to the teaching of critical reading skills to adult college students.

Motivation to learn.

Mature students are more motivated by intrinsic drivers, such as self-improvement, rather than by extrinsic factors according to Knowles et al. (2011). In addition, adults are more engaged when they believe the effort expended will be worthwhile, and the learning will help them solve a problem that has importance (Knowles et al., 2011). Wlodkowski (2008) identified five characteristics of instructors that affect the motivation of adult students: "expertise, empathy, enthusiasm, clarity, and cultural responsiveness" (p. 50). Cultural responsiveness involves not only a respect for diversity, but also acknowledging adults bring a wide variety of different experiences to the classroom. Learning through experiences is a key tenet of constructivism, as discussed in the next section (Savery & Duffy, 1996).

Constructivism

Leonard (2002) identified several paradigms of learning, however constructivism was most often associated with adult learning. Many different theories fall under of the category on constructivism, such as Dewey's humanism, Vygotsky's social development theory, Piaget's development learning theory, Bruner's discovery learning theory, and Lave's situated learning (Leonard, 2002). Savery and Duffy (1996) described

constructivism, based on the theories of Dewey and Piaget, as having three central principles. The first principle was people learn and generate new understandings from their experiences. Second, Savery and Duffy (1996) said cognitive puzzlement is the stimulus for learning, and they asserted the learner's goals are what drive the process. This is similar to the concepts of the learner's need to know and self-directed learning in andragogy (Knowles et al., 2011). The third principle was that social interactions were critical to learning, because people gain new insights by testing and sharing their individual understandings with others (Savery & Duffy, 1996). These principles can be incorporated into the design of learning activities for adult students.

Lebow (1993) identified five instructional design principles consistent with a constructivist perspective: (a) shield students from negative aspects of the educational process, (b) allow autonomy and put the learning in context, (c) provide a reason for learning within the activity itself, (d) enable learners to be responsible for their own developmental processes, and (e) encourage individuals to direct their own learning and to learn from their mistakes. Lebow (1993) stated the first principle was the most important because he believed many of the widely accepted educational practices have a damaging effect on the individual learner. Likewise, Knowles et al. (2011) believed that a highly structured college environment can frustrate adult students. Although Lebow was not focused specifically on adult learners, many of his principles for the design of educational materials, based on constructivism, were consistent with the learning preferences described in andragogy.

Savery and Duffy (1996) expanded on the work of Lebow and specified eight principles associated with a constructivist approach to instructional design: (a) tie the

learning activities to completing a larger task; (b) encourage learners to be accountable for addressing the entire problem; (c) create learning activities that involve authentic tasks; (d) design the work to reflect the complexity that will be encountered outside of the school setting; (e) enable students to have a degree of control over the problem to be solved; (f) ensure the learning environment stretches an individual's thinking; (g) urge students to test different ideas, concepts, and approaches with each other; and, (h) foster reflection on both the learning outcomes and the process. The principles enable students to take ownership of the learning process and encourage the testing of concepts to construct new knowledge. In addition, the learning tasks are authentic, meaning they are based on real-world scenarios. The principles stress a task orientation to learning; that is: learning by doing. In addition to the tasks, the last few principles challenge the student to consider alternatives and to reflect on what was learned. This is critical to the learning process, according to Savery and Duffy (1996).

Huang (2002) noted the constructivist's approach of designing instructional materials often includes project-based learning. However, the project deliverables, papers, and portfolios produced by completing tasks and solving problems may be time consuming to evaluate. Computerized tests are efficient to grade; projects, papers, and portfolios generally must be graded by a faculty member. The expense of the evaluation may be an important instructional design consideration for CBE programs that are intended to be low cost. At Brandman University, for instance, 60 percent of the competencies use performance-based assessments, however the rest of the competencies are assessed through computerized exams (Olson & Klein-Collins, 2015). At Southern New Hampshire University's College for America, all of the assessments are based on

completing workplace-related tasks (Eduventures, 2015). Just completing tasks, however, may not demonstrate a knowledge of the underlying principles that are applicable beyond the task being assessed. For instance, when Brown University wanted to redesign its medical education to be competency-based, initially there was faculty resistance because the plan focused too heavily on abilities and not enough on knowledge; the institution, therefore, modified its approach to give equal weight to each (Smith & Dollase, 1999).

Although constructivists emphasize learner-centered approaches, adult students have widely differing experiences that they bring into the classroom, making it difficult for instructional designers to develop courses that meet the varied needs of an entire of class of post-traditional students (Huang, 2002). On the other hand, self-paced programs can enable more accomplished students to move through the material faster. However, when individuals are at different points in a course, fostering collaboration between students on specific subjects as part of the learning process is hampered (Huang, 2002). Nonetheless, Huang asserted constructivism is an important basis for adult learning.

Summary: Adult Learning Preferences

Both constructivism and andragogy take a learner-centered approach (Pratt & Nesbit, 2000). That is, the student has a degree of autonomy and control over the learning process. Knowles et al. (2011) called this self-directed learning. Both approaches also focus on learning by doing, with an emphasis on completing tasks or projects as a way to learn. Adults want to learn when they have an immediate problem to be solved (Knowles et al., 2011). Consistent with a learner-centered approach, one of the principles of CBE is that students are responsible for their own learning (Elam, 1971).

Although many of Savery's and Duffy's (1996) principles of instructional design are consistent with the way adults prefer to learn (Knowles et al., 2011), one of the principles focuses on learning in a social context where students test ideas with each other. Knowles et al. (2011) emphasized the characteristics of the individual learner. Likewise, Knowles et al. (2011) did not stress the role that reflection plays in the learning process. Since Knowles et al. were focused on adult students, they emphasized acknowledging the students' prior learning experiences that they bring into the classroom. Savery and Duffy (1996) asserted students should be challenged, but they did not specifically address incorporating prior experiences. Huang (2002) noted the wide variety of different experiences and expertise possessed by adult students may complicate the instructional design. Nonetheless, Pratt and Nesbit (2000) emphasized constructivism and andragogy both focused on the individuals' ability to learn, rather than assuming people must be taught.

Much of the theory of andragogy evolved from Knowles' observations of training within businesses (Knowles et al., 2011). Given that individuals are likely to apply the learning in a relatively short time after being trained, it is easy to see how the six characteristics described by Knowles et al. would apply to people who attend classes given by their employer. However, corporate training programs differ from postsecondary education, particularly in the way individuals are assessed. There are typically no grades or transcripts associated with corporate training and the ultimate assessment of whether the training is effective or not is often done after the individual returns to the job (Knowles et al., 2011). Although Knowles provides important insights into adult learning preferences, not all of his concepts can be fully implemented in a

college setting. Nonetheless, the theories of andragogy and constructivism can inform the design of the formative assessments and learning materials in competency-based degree programs. The next section describes aspects of competency-based higher education.

Competency-Based Higher Education

CBE, the third stream for this literature review, represents a major change to how students learn and how learning is assessed (Elam, 1971; Jones & Voorhees, 2002; Voorhees, 2001). Competencies involve integrating cognitive knowledge, psychomotor skills, and attributes from the affective domain (Davies, 1976; Houston, 1974a), addressing not only what students know, but what they can do, and how they do it (Voorhees, 2001). Furthermore, it is important to note there are different levels of competence required at various stages in an individual's career (Dreyfus, 2004; SHRM, 2016a; Swing, 2010). Whereas question-and-answer exams may be a way to assess knowledge, projects and portfolios are common mechanisms for students to demonstrate their skills (Cambridge, 2008; Jiang et al., 2006; Mendenhall, 2003; Peinovich et al., 1997). Additionally, observations in the field are typically used to evaluate affective attributes of how an individual, such as a student-teacher or a medical intern, performs; so, experiential learning may be an important part of CBE (Elam, 1971; Taber et al., 2010). That means an employer, rather than an instructor, may assess a student's capabilities.

It should be noted CBE had been popular before, and then fell out of favor. Because leaders at universities implementing competency-based approaches must consider the long-term implications of their decisions, it is important to understand past

problems with CBE. Therefore, this stream of the literature review begins with the various ways CBE has been defined, and the problems encountered in the past. Then, the academic decisions associated with identifying competencies are discussed. The final subsection of this stream addresses the institutional implications that must be considered by the executives deciding on strategic options and the administrative directors making operational decisions for CBE programs.

Defining Competency-Based Higher Education

Instructional programs that directly assess student learning instead of tracking credit or clock hours are defined as direct assessment CBE programs by federal regulations (U.S. Department of Education, 2015a). There is no official federal definition for CBE programs that use credit hours (U.S. Department of Education, 2015a). When CBE was first introduced for higher education in the United States, Elam (1971) detailed five essential elements of an educational program that is competency-based: (a) competencies are derived from the requirements of the profession, can be assessed, and are publicly available; (b) the criteria to assess competencies are relevant, public, and describe expected levels of mastery; (c) the actual assessment of competencies is objective and based on the student's performance, but also considers the individual's knowledge; (d) the learner's progress is determined by the rate at which competencies are demonstrated, not the time spent taking courses; (e) the instructional materials and activities are designed to develop and assess competencies. Elam (1971) also identified six attributes of CBE that are still being discussed today: (a) learning is individualized; (b) feedback is essential; (c) the program is based on a systemic paradigm, meaning components are interrelated; (d) exit, not entrance, criteria must be met; (e) instruction is

modularized; (f) students are responsible for their own performance. Elam went on to assert that it is desirable for competency-based programs to be field-based, meaning that students have the opportunity to demonstrate their skills in the workplace.

The definition of CBE from the Competency-Based Education Network (2016) specified the time to master competencies varies, but the expected learning outcomes are fixed:

> Competency-based education combines an intentional and transparent approach to curricular design with an academic model in which the time it takes to demonstrate competencies varies and the expectations about learning are held constant. Students acquire and demonstrate their knowledge and skills by engaging in learning exercises, activities and experiences that align with clearly defined programmatic outcomes. Students receive proactive guidance and support from faculty and staff. Learners earn credentials by demonstrating mastery through multiple forms of assessment, often at a personalized pace. (para. 1)

This definition includes the requirement of guidance from faculty, but it is not as explicit as Elam (1971) about the important role of feedback in the self-paced learning environment. However, the Competency-Based Education Network knows academic programs must provide regular and substantive support for students, including significant interaction with instructors, to qualify for federal student aid (IFAP, 2013a). Otherwise, a self-paced curriculum is considered to be the equivalent of correspondence courses, and thereby federal funding is limited (Howard, 2014).

Johnstone and Soares (2014) described the principles of competency-based degree programs in a way similar to Elam: (a) degrees must be based on competencies that are robust and meaningful; (b) students should be supported in their studies as they progress at their own pace; (c) the resources for learning should be reusable and always available for the self-paced learners; (d) competencies are connected explicitly to courses, learning outcomes, and assessments; (e) assessments, which are critical in CBE, must be reliable

and secure. Johnstone and Soares went on to say that competency-based programs link education to the needs of employers and are a way to provide quality education that is also affordable. Since CBE programs are typically online, that makes it much easier to provide reusable resources, as noted by Johnstone and Soares (2014). This is a significant difference from when CBE was attempted in a classroom setting in the 1970s, because reusable resources have the potential for controlling the cost of higher education.

The discussion above describes some of the different ways in which CBE may be defined. When a competency-based program is designed to be self-paced without classes of students progressing through the material together, then as Houston (1974b) noted, implementing the CBE program will impact the administrative operation of the institution. Furthermore, without classes for students to attend or for instructors to teach, new ways of charging students and compensating faculty have to be identified. Even though CBE emphasizes self-directed learning by students, federal student aid is premised on the notion that the government is helping to defer the cost of instructors teaching students. That is why student aid is generally not available to pay for assessing prior learning and is restricted for self-paced programs that are considered to be a collection of correspondence courses with limited instructor interaction (Howard, 2014; Whitman, 2015). Given that, self-paced CBE may have a major impact on individual institutions, as well as the current higher education system. However, previous attempts to implement competency-based higher education ran into significant roadblocks, as described below.

Early Competency-Based Attempts and Problems

Although competency-based training programs can be traced back to the 1910s (Brown, 1994), the first CBE initiatives in U.S. colleges and universities were associated with educating teachers. After the U.S. federal government underwrote experiments with competency-based teacher education in 1968 (Burdin & Lanzillotti, 1970), additional seed funding for more initiatives was provided in 1973 (Grant et al., 1979). Eight states were already using CBE for training teachers, and 22 more states planned to implement such programs (Schmieder, 1973; Villeme, 1977). By 1976, however, a turnaround had occurred—although 11 states had instituted competency-based programs and five had plans to do so, 34 states said they had no intentions of pursuing a competency-based approach (Villeme, 1977). Broudy (1972) noted performance-based teacher education, later called CBE, was a response to both social pressure and the belief that educating prospective teachers on the theory of learning did not adequately prepare them for the classroom experience. Instead, future educators were to be judged on their ability to perform various tasks associated with instructing. However, Broudy asserted competent teachers are not merely the sum of their abilities to perform individual duties. He disagreed with the emphasis on teaching skills, in lieu of a knowledge of the underlying theories of learning. Because at that time, many states did not have student-teaching requirements, Broudy advocated for a model of teacher education that was similar to the internships and residencies required for physicians, instead of performance-based teacher education. The next subsections discuss some of the problems with the early implementations of competency-based higher education.

Problems: Tying competencies to workplace outcomes.

Voorhees (2001) emphasized competencies are measured by the results produced. The focus is on what individuals know, what they can do, and how they do it. For instance, an accountant would need to know the principles of accounting, demonstrate how to balance the books at the end of the month, and do that in a way that is consistent with generally accepted accounting practices. In the medical profession, there is a move to focus on patient outcomes as a demonstration of competence (Taber et al., 2010). However, even in Canada where there has long been an emphasis on medical outcomes, it is challenging to identify and assess what competencies were required to produce certain results (Taber et al., 2010). Likewise, when CBE was first introduced for teacher education, Kay and Massanari (1977) noted defining and assessing competencies for teachers presented significant issues. Nonetheless, since the 1970s, although defining competencies is difficult, several industry groups have attempted to identify the competencies required of their professions (AICPA, 2016; IBSTPI, 2016; SHRM, 2016a).

Problems: Overloaded faculty.

Another problem with CBE in the 1970s was the focus on individualized learning so students could progress at their own pace, based on their capabilities (Grant et al., 1979). Without the online and adaptive learning systems that are available today, faculty were often overwhelmed by the need to develop individualized curricula and assessments (Ainsworth, 1979; Woolf & Bishop, 1980). Additionally, the problem was exacerbated because feedback on assignments and assessments had to be provided quickly, so as not to slow down the progress of the students. Furthermore, instructors had to find the time

to give individual attention to slower students. Some, but not all, of the challenges of self-paced CBE can be alleviated through the use of technology.

Problems: Lack of peer support for students.

Because CBE emphasizes self-paced, individualized learning, students have suffered from a lack of peer support and camaraderie with other students as they progressed through the curriculum (Grant et al., 1979). As a result, many of the competency-based programs in the 1970s had a high mortality rate. To attempt to combat this, Florida State University in the 1970s and, more recently, Western Governors University (WGU) have organized incoming students into cohorts (Grant et al., 1979; Mendenhall, 2003). Although students may progress at different rates, at least there are peers with whom they get to know when they start their programs. In addition, coaches or mentors are often assigned to work one-on-one with students to help keep them on track (Grant et al., 1979; Mendenhall, 2003). It is unclear if these measures are sufficient for most individuals, or just those few students who are highly motivated (Grant et al., 1979). Gallagher (2014) cautioned the current emphasis on self-paced CBE and individualized learning will result, once again, in its demise. However, allowing students to earn some credits using a self-paced approach and to earn other credits from taking classes, could enable students to progress at the own rate for some subject areas, and work with their peers in a class in other circumstances. Recently, the Council of Regional Accrediting Commissions (2015) stated hybrid CBE approaches combining courses and self-paced direct assessments would be allowed. WGU is doing something similar by transferring the credits from two-year degree programs at traditional colleges

and having students complete just the last two years of their bachelors' degree in a self-paced mode (WGU, 2016g).

Problems: Startup costs.

A significant issue with CBE has been the cost to develop competency-based programs. The state of Wisconsin recently allocated eight million dollars for several new CBE degree programs (Herzog, 2014a). Southern New Hampshire and Northern Arizona University received million dollar grants to create their CBE programs (Boutselis, 2012; NAU, 2012). Likewise, the Lumina Foundation provided a million dollars in start-up funds for the Texas Affordable Baccalaureate program, a CBE initiative involving multiple institutions in the Lone Star State (Klein-Collins & Glancey, 2015). The governor of Indiana awarded Purdue University a half million dollars for its CBE proposal (Fain, 2014). Grant et al. (1979) reported, however, that nearly every college they studied had underestimated the time and effort to develop competency-based programs. In addition, a recent study found it may take five years for institutions to recoup their startup costs (Desrochers & Staisloff, 2016). Therefore, without seed funding, it may be difficult for small, private colleges to afford experiments with this approach for learning.

Problems: Summary.

The concept of CBE may be appealing—enable students to master, at their own pace, the competencies they will need in the workplace. However, implementing the concept may be fraught with problems, especially if the right technologies are not available to support self-paced learning. In 1995, the internet was opened up for commercial traffic (MacKie-Mason & Varian, 1995). That ushered in a new wave of

online technologies that enabled universities like WGU to implement CBE in a way that overcame many of the problems of the past (Mendenhall, 2003). Although it is clear there are many challenges to implementing CBE, the next section describes how some colleges have determined competencies.

Determining Competencies

Regardless of the difficulties with implementing CBE, determining the workplace competencies to be incorporated into the curricula is a way for career-focused colleges to stay connected with employers (Paulson, 2001). Chyung, Stepich, and Cox (2006) explained Boise State University examines industry standards and contacts alumni and industry specialists to develop competency-based curricula for particular disciplines. Capella University, which focuses on post-traditional students, works with employers to determine what success looks like, and then identifies specific, measurable learning outcomes (Pearce & Offerman, 2010). Capella validates the outcomes are appropriate by examining the career success of alumni, and the university makes its assessment methods and results available to all the stakeholders, including employers (Pearce & Offerman, 2010).

College for America, part of Southern New Hampshire University, has a Workforce Strategy Center that analyzes the labor market to identify growing industries and business sectors undergoing significant changes (Clerkin & Simon, 2014). The center also looks for specific occupations where the demand for professionals is on the rise. They, then, try to determine the skills needed to be successful in specific jobs in those industries. To check their understanding of the requisite skillsets, they conduct

focus groups and survey employers. From this analysis, high-demand skills are incorporated into the competencies in their degree programs (Clerkin & Simon, 2014).

Some universities have adopted the competency models developed by others. For instance, Lipscomb University uses the Polaris framework, developed by the Organization Systems International Company in Europe (Klein-Collins & Olson, 2015). Each competency is explicitly defined. Many of the competencies are behavior-related and involve "soft skills," which students must demonstrate in a group setting. Another example of using existing competency models is WGU (2016a), which bases its competencies for its undergraduate HR Management degree on the HR Body of Knowledge from the HR Certification Institute (HRCI).

However, the broad requirements for a profession in the competency models developed by industry associations often have to be detailed at a lower level for formative purposes within educational programs. For instance, for medical students, Swing (2010) described higher-order competencies that are an aggregation of lower-level ones. The medical school at Southern Illinois University created the concept of nested competencies by which students continue to practice basic skills and integrate them into more sophisticated procedures (Grant et al., 1979). Whereas the U.S. Department of Education definition of a competency as "a combination of skills, abilities, and knowledge needed to perform a specific task" (Jones & Voorhees, 2002, p. 7) is appropriate for formative purposes, competencies based on specific tasks must be bundled into higher-order competencies to prepare individuals to become professionals. In addition to defining multiple levels of competencies, different competencies must be specified for various

specialty areas. However, there may be some competencies that are required across disciplines.

The Lumina Foundation and the Association of American Colleges and Universities have proposed general frameworks for CBE (Johnstone & Soares, 2014). The Degree Qualifications Profile (DQP), developed by the Lumina Foundation, identifies five areas of learning: (a) knowledge specific to certain disciplines, (b) comprehensive and integrated learning, (c) intellectual and analytical capabilities, (d) applications of the knowledge, and (e) civic, social, and global perspectives (Adelman, Ewell, Gaston, & Schneider, 2014). The Liberal Education and America's Promise (LEAP) campaign from the Association of American Colleges and Universities has identified four essential outcomes for liberal arts education: (a) knowledge of human cultures and the physical and natural world, (b) intellectual and practical skills, (c) personal and social responsibility, and (d) integrative and applied learning (AAC&U, 2008). Both the DQP and the LEAP campaign are intended to be generic for universal use and customized within each competency area by individual universities.

To summarize, defining the competencies within a competency-based program is not a simple exercise. Key attributes of CBE are that competencies are explicit, publicly known, and grounded in career requirements (Elam, 1971). Different institutions have used various approaches to ensure the competencies in their programs are the ones that are needed in the workplace. Even though there is no single definition for competence, it should be noted there is also no universal agreement on what it means to be educated. However, that has not deterred institutions of higher learning from tackling it. Colleges and universities that offer career-oriented degrees can leverage the work done by the

industry associations and state boards that identify the requirements for entry into a profession, rather than defining all of their own competencies for students. In addition, industry associations and boards responsible for defining employment requirements may be involved in assessing students. How students are assessed is not the only significant change in CBE. There are several broad institutional implications, as will be discussed in the next section.

Institutional Implications of CBE

In addition to determining the competencies within a CBE program, universities must decide how a competency-based program will be structured and administered. Self-paced approaches present challenges when existing operating policies and procedures are designed for fixed-length classes that begin and end in specific terms (Houston, 1974b; Hurst, 2013; Nodine & Johnstone, 2015; Public Agenda, 2015). Furthermore, the regulatory environment for accreditation and federal student aid for CBE degree programs is still evolving (Bounds, 2015; Council of Regional Accrediting Commissions, 2015). Therefore, before beginning a CBE initiative, university executives must decide on the right strategic models (Weise, 2014), and keep abreast of the evolving regulations.

The academic model.

A key decision for university officials is whether direct assessments will be used in lieu of credit hours in competency-based programs. Klein-Collins (2013) described three ways for implementing CBE: (a) modifying traditional courses to include competencies; (b) using competencies as the basis for redesigning the entire curriculum, but retaining credit hours; or, (c) implementing a direct assessment approach to eliminate

credit hours altogether. Eduventures (2015) identified six approaches to CBE—the ones described by Klein-Collins (2013), plus three more variations: (d) self-paced completion degrees that aggregate credits transferred in from elsewhere, (e) competency-based PLAs, and (f) project-based learning where competencies are developed by doing projects. Several universities fall into more than one category. For instance, Southern New Hampshire's competency-based programs use direct assessments and project-based learning (Eduventures, 2015). WGU uses project-based learning in conjunction with a curriculum designed around competencies that retains credit hour equivalencies (Eduventures, 2015). In addition, students can transfer credits from elsewhere to complete their degrees at WGU (Semuels, 2015; WGU, 2016g). Although Eduventures (2015) considered competency-based assessments of prior learning a form of CBE, and many colleges offer PLAs (LearningCounts, 2016), PLAs generally do not qualify for federal student aid because they do not involve any instruction (Howard, 2014). Furthermore, the regional accreditors do not allow PLAs in direct assessment CBE programs (Council of Regional Accrediting Commissions, 2015). In addition to the academic model for CBE, institutions must decide how the academic content will be provided. That can involve a build-versus-buy decision.

Build versus buy.

Most people would assume designing learning activities and materials would be a primary role of a university. Nonetheless, WGU decided to use existing online courses from third parties, rather than develop their own (Kinser, 2002; Mendenhall, 2003). Instead of creating courses, the institution determined the required competencies, and initially let students pick and choose which online classes from other sources, listed in the

WGU catalog, they might need to develop the required competencies. However, WGU found there was often a mismatch between existing course content and specific competencies (Kinser, 2007). Additionally, the online class size restrictions at the other colleges, advertised in the WGU catalog, sometimes meant WGU students could not take courses when they wanted (Meyer, 2005). Therefore, the university decided to contract with third parties for courses that were a better match to the competencies and that would not restrict enrollment. Other institutions, like Northern Arizona University, also decided to contract with third parties. That university partnered with Pearson Learning Solutions, rather than build their own competency-based learning modules (NAU, 2012). Pearson is working with Texas A&M University and South Texas College to develop competency-based learning materials (Pearson, 2013). Similarly, Brandman University teamed up with Flat World to build its CBE content (Olson & Klein-Collins, 2015).

The financial model.

In addition to the build-versus-buy decision, there are other financial considerations. The "all-you-can-learn" subscription model for tuition is a popular choice for self-paced CBE programs to encourage students to learn as much as they can in a specific time period (Book, 2014; Mendenhall, 2003). This may reduce the cost of earning a degree if students are able to complete competencies quickly (Kelchen, 2015). However, if students work at a slower pace, a subscription model could turn out to be costlier than paying by the assessment, learning module, or competency (Kelchen, 2015). Kelchen concluded when students receive federal grants and progress through self-paced programs quickly, CBE can save students money. However, if those conditions are not met, CBE may cost students more than traditional programs. Regarding the costs

incurred by universities, Huang (2002) noted grading the types of assessments used in CBE: papers, projects, and portfolios, is labor-intensive. However, WGU controls labor costs by using part-time faculty to grade assessments (Mendenhall, 2003). Nonetheless, the Education Advisory Board cautioned CBE could cost institutions more than traditional programs because of the additional staff needed to support self-paced students (EAB, 2015).

Regular and substantive interaction with faculty.

Although self-paced CBE programs are sometimes positioned as a low-cost alternative to rising tuition rates in higher education (Kamenetz, 2013), the U.S. Department of Education requires substantive and regular interaction between instructors and students; otherwise self-paced programs are considered to be correspondence programs, which do not qualify for all the federal student aid benefits (Howard, 2014; Whitman, 2015). This presents a challenge for self-paced CBE programs where students are working through learning modules and assessments individually and not attending formal classes. Merely having students initiate contact with instructors when they need help is not considered regular and substantive interaction (Howard, 2014; Whitman, 2015). The way WGU ensures regular contact with self-paced students is to assign mentors to proactively reach out to students every week or so to help keep them on track with their individualized study schedules (Mendenhall, 2003). The University of Michigan has mentors who help students find the right subject matter experts (Fain, 2014). Although these are ways to provide regular contact with students, the Office of Inspector General for the U.S. Department of Education questioned whether interaction with CBE mentors met the requirement of regular and substantive interaction with faculty

members (Whitman, 2015). The U.S. Department of Education asked accreditors to carefully review how instructors and students interacted in self-paced programs and whether CBE mentors should be considered faculty (Bounds, 2015; Whitman, 2015). Semuels (2015) speculated that CBE programs that provide a lot individualized interaction could become costly as the programs are scaled. There are significant challenges to providing CBE at a low cost and still meet the federal student aid requirements for substantive and regular interaction between faculty and students.

Satisfactory academic progress.

Institutions that want their students to be able to receive federal aid for their CBE programs must meet several operating conditions, in addition to demonstrating regular and substantive interaction with instructors (IFAP, 2013a; Muir & Goldstein, 2014). If direct assessments are used in lieu of credit hours, the college must relate the competencies to an equivalent number of credit hours, since that is the basis for calculating the amount of federal student aid (IFAP, 2013a). In addition, to continue to receive aid, students must show "satisfactory academic progress," which is defined as the percentage of total credit hours successfully completed versus the total credit hours attempted (IFAP, 2014). This may be tricky to calculate in self-paced programs because students may be part way through several different competencies at the end of the term. A further complication is determining if there is a need to return federal Title IV funds, referred to as R2T4, if self-paced students stop in the middle of an academic term (Muir & Goldstein, 2014). Rather than penalizing students for competencies that are incomplete, WGU calculates satisfactory academic progress as passing at least 67 percent of the competencies attempted in a term, which means that students may be reluctant to

attempt too many competencies (Porter, 2014; WGU, 2016d). On the other hand, the College for America at Southern New Hampshire University encourages students to progress as fast as they can by calculating satisfactory academic progress based on the number of competencies passed, without taking into account the number attempted (Porter, 2014; SNHU, 2016). This may encourage students to try assessments before they are ready since they can repeat assessments. However, when students pass after repeated attempts, they may be demonstrating competency on that particular assessment, not proving general mastery (Swing, 2010; Woolf & Bishop, 1980); but, developing multiple assessments for the same competency is costly. Keeping down the cost of higher education is one reason universities are considering CBE (Kamenetz, 2013).

Enrollment.

Whether a student is enrolled part time or full time has implications for the amount of federal aid for which the student is eligible (Porter, 2014). However, when students work through learning modules and assessments at their own pace, the traditional calculation of full time or part time, based on the number of classes in a term, no longer applies. Nodine and Johnstone (2015) found colleges implementing CBE reported significant issues when trying to use existing enrollment systems for self-paced programs. The start of the CBE program at Northern Arizona University, for instance, was delayed when the institution tried to enable enrollment whenever students wanted to begin their self-paced programs (Hurst, 2013). The university found its information systems were designed to admit students only for specific, fixed-schedule terms. Full-time and part-time status does not apply at WGU because students pay the same tuition regardless of how fast they move through the program (Mendenhall, 2003). This

encourages them to move at a fast pace (Mendenhall, 2003). However, to maintain full-time status, students must demonstrate satisfactory academic progress, as described above. Part-time status does not apply to institutions that use "all-you-can-learn" subscriptions for their CBE programs, which is why self-paced CBE programs may be more expensive than traditional programs, if students do not progress quickly (Kelchen, 2015). However, Soares (2013) noted post-traditional students, especially those who are working, are likely to attend college part time. Furthermore, post-traditional students often attend multiple colleges, which has implications for transcripts as described below (Soares, 2013).

Transcripts.

Students who want to transfer to another university or continue on to graduate schools need an official transcript. In CBE programs, students can generally take competency assessments multiple times, so grades may be pass / incomplete rather than letter grades (White, 2005). However, other universities may want to see a letter grade or grade point average before giving students transfer credit for courses. In addition, employers may want to know the student's grade point average. For that reason, Northern Arizona University makes distinctions between the students' levels of competence and converts those levels to letter grades (NAU, 2016b). Brandman University provides dual transcripts for students, one showing competencies and the other indicating the equivalent number of credit hours (Olson & Klein-Collins, 2015). This is because its regional accreditor requires colleges to have a mechanism for students to transfer credits to other schools, to avoid the cost of retaking courses after transferring

(Olson & Klein-Collins, 2015). In addition to a transcript, the professional accreditation associated with the CBE program may be important to career-oriented students.

Professional Accreditation.

Career-focused degree programs may have professional accreditation in addition to the regional or national accreditation that applies to institutions and is required for federal student aid. The Council for Higher Education Accreditation (CHEA) has recognized 60 accrediting agencies (Brink & Smith, 2012). CHEA recognition has included, for instance, three professional accreditors for business programs: the Association to Advance Collegiate Schools of Business (AACSB), the Accreditation Council for Business Schools and Programs (ACBSP), and the International Assembly for Collegiate Business Education (IACBE) (Brink & Smith, 2012). The AACSB is the oldest business accreditor (Brink & Smith, 2012), however, in September 2016, CHEA withdrew recognition of the AACSB (CHEA, 2016). The ACBSP and IACBE were both founded by Dr. John L. Green, Jr. and have similar standards; except the ACBSP emphasizes teaching excellence, whereas the newer IACBE focuses on educational outcomes (Brink & Smith, 2012). Although its emphasis on outcomes might seem to be an ideal fit for CBE programs, the IACBE (www.iacbe.org) does not have specific standards for competency-based programs. The same IACBE requirements apply to all business programs: traditional and CBE. Likewise, the ACBSP (www.acbsp.org) does not have standards specific to CBE. On the other hand, the AACSB noted that cultivating and assessing competencies is part of its vision for the future (AACSB, 2016). Brink and Smith (2012) found accreditation by the AACSB, once considered the gold standard, is the costliest of the three professional accreditors for business programs.

Professional accreditation for CBE programs varies by institution. WGU does not have professional accreditation for its business CBE degrees, although its teaching and nursing CBE programs are approved by professional accreditors (WGU, 2016c). Likewise, Brandman University offers CBE degrees in business, but does not have a professional accreditation for those academic programs (Brandman University, 2016a). College for America at Southern New Hampshire University is regionally accredited as an institution, but its competency-based programs do not have professional accreditation (College for America, 2016a). The same is true for the CBE programs at the University of Wisconsin (UW Flexible Option, 2016). At Capella and Walden Universities, their CBE business programs are accredited by the ACBSP (Capella, 2016a; Walden University, 2016). At Northern Arizona University, some of its traditional business programs are accredited by the ACBSP and others by the AACSB (NAU, 2016a); but, it unclear if the CBE programs are professionally accredited. The competency-based business degrees at Excelsior College are accredited by the IACBE (Excelsior College, 2015). Professional accreditation of competency-based academic programs may not be as important as the ability of graduates to demonstrate they have developed the competencies that employers seek.

Competency-Based Higher Education Conclusion

It should be clear from the discussion above that a host of decisions are involved in the design of CBE programs. Moreover, no one approach is right for every situation. A self-paced, competency-based approach can break the link to the credit hour for tracking progress toward graduation (Laitinen, 2012). Even though the credit hour was not originally intended to gauge student achievement (Shedd, 2003), only recently have

colleges been able to qualify for federal student aid by tracking competencies and using the direct assessment approach, instead of counting credit hours (IFAP, 2013a). While the advocates of self-paced CBE emphasize the possibility that experienced adults could complete their degrees faster (Kamenetz, 2013), students who are working full time have been shown to choose a slower pace for their education (Kelchen, 2015; Mendenhall, 2003). Furthermore, self-paced, competency-based alternatives are not the right choice for everyone (Jiang et al., 2006; Kinser, 2007). Therefore, each college must make a lot of its own decisions when considering a CBE program.

Summary

The map for the literature review shows the three streams: (a) standardized requirements for professions, (b) adult learning preferences, and (c) competency-based higher education have overlapping characteristics. Paulson (2001) maintained that CBE was a way to link higher education to career requirements. In particular, the competencies and credentials required for individuals who aspire to enter a particular profession can be built into the competency-based degree program. The design of competency-based learning materials and formative assessments should reflect the learning preferences of adults, if the CBE program is intended for post-traditional students. As described below, the three streams have significant areas of overlap.

Embedding competency models in college curricula is a way to incorporate the standardized requirements for professions. The Society for Human Resource Management, for example, reported 100 colleges have adopted their curriculum recommendations (SHRM, 2009). For colleges that want to incorporate licenses, registrations and certifications into their degree programs, there are several

considerations. Soares (2013) recommended progressive credentialing where one certificate built on another until students earned enough credits for a degree. Goetz, Zhu, Hampton, Chatterjee, and Salter (2011) asserted earning certificates as part of degrees may be significant mileposts that encouraged students to persist through graduation. Given that less than 60 percent of students graduate within six years (Shapiro et al., 2015), persistence may be an important factor in improving graduation rates. Since licenses and registrations vary by jurisdiction, and students in online CBE programs may be from various parts of the country or the world, licenses and registrations that apply only to certain localities should not be the sole exit criteria for graduation. Even though federal financial aid does not cover the fees associated with licensure / certification exams (Adelman, 2000), Goetz et al. (2011) noted discounts were often provided for students. WGU solves that problem by building the cost of the certifications into its tuition (WGU, 2016b). However, institutions that view CBE as a low-cost alternative to traditional higher education, may object to including extra expenses. Furthermore, there may be competing certifying bodies in the same field, making it unclear which certifications to use. Colleges that incorporate the wrong certifications into their programs or use certifications from unaccredited entities may find students or employers do not value the degree. In addition to certifications and licenses, institutions should consider the learning preferences of adults in the design of CBE programs for post-traditional students.

Andragogy has six principles for adult learning and constructivism, a theory of how knowledge is acquired through one's experience, is often applied to adult students. Pratt and Nesbit (2000) noted the principles of CBE and andragogy originated during the

same time period and share common characteristics. The constructivist theory of knowledge is similar in several ways to andragogy (Pratt & Nesbit, 2000). The philosophy of constructivism in many CBE programs assumes students learn through doing tasks and projects (Jiang et al., 2006). An orientation toward problem solving is also a key tenet of andragogy (Knowles et al., 2011). Self-directed learning is another important principle in both andragogy and constructivism (Knowles et al., 2011; Savery & Duffy, 1996). Elam (1971) noted that in competency-based higher education instruction is personalized, and students are accountable for their own learning. This is consistent with the notion of self-direction. However, guiding one's own learning does not necessarily mean progress is self-paced, which is often a characteristic of CBE. Jiang et al. (2006) noted only certain students did well in a self-paced environment. Nonetheless, there are a variety of different ways to give students more control over their learning. At WGU, the competency units have pretests that inform students about what will be learned (Mendenhall, 2003). If students pass the pretest, they can attempt the assessments without completing the learning modules. WGU provides students a variety of options from online courses to self-study modules, so individuals can decide how and when they want to learn (Jiang et al., 2006). Students at Capella University are given a dashboard that displays in a graphical format how many competencies they have completed, so they can readily see how much is left to do (Kamenetz, 2013).

In summary, competency-based degree programs may be implemented in various ways. CBE programs are often targeted at post-traditional students enabling them to complete their studies at their own pace. In addition, the requirements for professions may be built into career-oriented CBE degrees. The university in this case study is

focused on its mission of being open access and offering a cost-effective, career-oriented education that fits within the busy schedules of working adults. Therefore, the institution's mission, as incorporated within its operating model, was the basis for the decision-making framework and the driving force for selecting from the myriad of options for creating a CBE program. It was important to take into account the learning preferences of post-traditional students, and it was critical to create a curriculum that prepared individuals for professional careers to satisfy the university's mission. Furthermore, since most students at the institution in the case study receive federal student aid (*Our Story Unfolds*, 2015), the new CBE programs had to meet the federal regulations for aid. The next chapter details the research approach used to examine why one private, nonprofit university made certain choices when it designed a self-paced, competency-based undergraduate degree program intended to enhance the career opportunities for post-traditional students. The case study focused on the internal and external factors that influenced the design and implementation of the CBE program.

CHAPTER 3: RESEARCH METHODOLOGY

Introduction

This research used an explanatory case study approach to examine why one private, nonprofit university decided on particular options for a new self-paced, competency-based program for post-traditional students seeking career-oriented degrees. The central phenomenon for this research focused on how the decisions made in creating a new, self-paced CBE degree program were impacted by the following internal and external factors in the conceptual map: (a) the university's operating model, (b) the requirements for professions, (c) the principles of CBE, and (d) the regulatory environment. Merriam (1998) stated case studies should illuminate the phenomenon to provide new insights, enhance the reader's understanding, and / or confirm existing knowledge. Case studies that include rich, thick descriptions enable the readers to decide if their situations are similar enough to the case study that the research findings might apply to them (Merriam, 1998). Although it is unlikely another institution would duplicate all the decisions described in the case study, other colleges may find it helpful to understand why certain choices were made, as they design their own CBE programs. The lessons learned from this study also may help others avoid some pitfalls.

The overarching question for this case study was: Why is a private, nonprofit university deciding to design self-paced CBE programs in a particular way as an option for post-traditional students seeking career-oriented degrees? The specific research questions associated with the internal and external factors influencing the design and implementation of the competency-based programs were: (a) How does the mission of the university, to provide open access to career-oriented degree programs for adults of all

ages, influence the decisions associated with offering CBE? (b) How is the regulatory environment impacting decisions related to the design of the new CBE degree programs? (c) How do the internal economics and policies of a private, nonprofit university affect the program content, design, and implementation decisions of a CBE program? The rest of this chapter describes the research design and rationale, the site and population, the research methods, and ethical considerations.

Research Design and Rationale

The research design was based on an explanatory case study approach using qualitative methods. A case study is appropriate when the research questions are "how" or "why," when control of behavioral events is not required, and when the research focuses on current activities versus historical ones (Yin, 2014). Although case studies might use quantitative, qualitative, or mixed methods (Yin, 2014), qualitative research explores a central phenomenon rather than seeking correlations between variables (Creswell, 2012). The set of decisions around the design of new competency-based degree programs was the central phenomenon, and the learnings gleaned were the reason for conducting this research. Therefore, an explanatory case study using qualitative methods was chosen.

The case study covered a three-year period during which a self-paced CBE degree at a private, nonprofit university was created. The timeline for the case began with the first presentation on CBE at the monthly Faculty Senate meeting in February 2013. After four months of discussions, the Senate affirmed a resolution to adopt competency-based learning. This resulted in the design and development of an undergraduate CBE degree in HR Management in the College of Business, which was piloted with one student in fall

2015. However, the student in the pilot switched from the CBE degree into the traditional HR Management program before the first term ended. In addition, the university found its existing systems would not support a self-paced program. Nonetheless, in February 2016, the Faculty Senate approved new policies to incorporate aspects of competency-based learning into the traditional degree programs. With no additional students interested in the CBE program and the new competency-based options within the traditional degrees, for the first time in three years, CBE was removed in May 2016 from the list of institutional priorities. The three-year case study ends at that point. However, the CBE design and development work was not for naught because the newly created learning modules are being offered as new one-credit courses that meet many of the objectives of the CBE program.

Site and Population

Population Description

The sample population was 25 university employees who were involved in the design of new self-paced, competency-based undergraduate degree programs. This research used what Yin (2014) called a single-case design with embedded units of analysis. A private, nonprofit university was the site, but five distinctly different units within the university were involved: (a) the College of Business, (b) the College of Health Professions, (c) the College of Online and Experiential Learning, (d) the directors from administrative and operational support units, and (e) the deans and the executive team.

The first three subunits in the case study were the colleges responsible for designing the online CBE curriculum. The College of Business worked on the academic

requirements for the undergraduate HR Management degree intended to be the first competency-based program. The College of Health Profession started designing a second competency-based degree for nursing. The College of Online and Experiential Learning worked with the other colleges to create the online learning modules. Since this research focused on the decisions for the CBE design, individual faculty members were included in the site sample only if they were part of the overall decision-making process.

The fourth subunit for this research included the directors responsible for determining the administration of the new degree program. Those four directors had responsibility for: financial aid, student billing, the registrar's office, and faculty development. The directors were included in the study because CBE can have a broad impact across the institution beyond the academics (Houston, 1974b; Weise, 2014). For instance, some of the administrative decisions for self-paced degrees involve what will appear on the student's transcript at the end of a term. Self-paced programs typically replace three-credit courses with smaller, online learning modules and associated assessments (Elam, 1971; Johnstone & Soares, 2014). Thus, if a student begins 17 CBE learning modules, but only successfully completes 11 assessments, should the registrar show only the completed units on the student's transcript, or will six units appear as "incomplete"? This decision has implications for whether a student is categorized as full time or part time and for how "satisfactory academic progress" is tracked for federal student aid. How student progress is reported could also impact the information systems used to support the financial aid and student billing organizations, and the registrar's office. If CBE involves redefining faculty roles, the faculty development organization needs to be part of the decision-making process. Given all of the choices that have to be

made regarding how the CBE programs will be administered and operationalized, the directors responsible for those decisions were an important part of the sample for this research.

The deans and the members of the executive team accountable for setting the strategic direction were the fifth subunit for the case study. The reason why the executive team decided to pursue CBE was strategically significant to the case. The choice of direct assessment CBE or a credit hour-based approach was an important decision that had broad implications. Another key decision involved how students would be charged for the self-paced program—whether an "all-you can-learn" subscription model would be used or students would be charged by the individual assessment or learning module. Therefore, the deans and executives played key roles in setting the strategic direction for the CBE initiative.

Site Description

The site for this study was a private, nonprofit university in the Eastern United States, founded in the 1960s, and given the pseudonym: Loudon University. The institution is open access / open enrollment, meaning nearly anyone with a high school diploma or General Educational Development (GED) certificate can enroll, with no required entrance exams. Loudon University offers career-oriented degrees focused on students of varying ages, especially working adults. The University is not a research institution—its five doctoral degrees are all professional degrees. Non-credit or continuing education courses are sometimes offered, but are not an area of emphasis. Since most undergraduates are over 24 years old, and many students have their own families, the University does not provide campus housing—all students commute or take

online courses. Loudon awards undergraduates credit through competency-based PLAs or for certain industry certifications students may have earned. The institution accepts up to 75 transfer credits via articulation agreements with community colleges. Many undergraduates have either an associate's degree or transfer from another institution. This is significant because the National Center for Education Statistics (2015) reported 46 percent of post-traditional students attended two-year public colleges and only 11 percent enrolled in four-year, private, nonprofit institutions, like Loudon.

Loudon University has seven colleges: Online and Experiential Learning, Business, Health Professions, Education, Arts and Sciences, Social and Behavioral Sciences, and Technology. The first three colleges above are part of this study. Although there is one main undergraduate campus, Loudon offers classes at 14 locations in three adjacent states. In addition, 85 degree and certificate programs are given in an online format (*Our Story Unfolds*, 2015). However, all the onsite and online courses are centrally coordinated by the deans and academic program chairs, most of whom work at the main campus. The program chairs determine the educational goals and select the textbooks for each course. All sections of a course are required to focus on the same learning outcomes, regardless of the instructor or the site where the course is offered. Instructors are free to determine how they teach a course, but they must meet the educational goals and use the textbooks selected by the academic program chairs. This consistency across campuses enables students to enroll in classes at any location they choose. For instance, employed students might take some courses near their worksites and other classes on a campus closer to their homes. University-wide consistency is an important factor for this case study, allowing the researcher to focus on the deans,

academic chairs, and administrative directors who are located on the main campus and who make the decisions implemented across the University. Individual instructors were not part of the sample population unless they were intimately involved in the CBE design. Because the University's operating model influenced the decisions for designing and implementing the CBE degree programs, additional details about the site are provided below.

According to the self-assessment report submitted to the regional accreditor (*Our Story Unfolds*, 2015), over 19,000 students, including 12,000 undergraduates, attend Loudon University. The student population is 65 percent female. Nursing is the largest undergraduate program, followed by business management. Close to 40 percent of students take most of their classes online. The vast majority of undergraduates are over 24 years old, and many have workplace or military experience. The mean undergraduate age is 31 years. Because students often are employed, 69 percent of undergraduates attend part time. Thus, the equivalent number of full-time students is fewer than 19,000. Since many undergraduates have associate degrees or transfer credits from elsewhere, only 11 percent are first-time, full-time students. In addition, nearly a third of undergraduates are low-income students who receive Pell Grants, and 46 percent have federal student loans. Given the number of students who receive federal aid, the new CBE programs must meet the federal CBE requirements while providing a cost-effective, career-focused option for post-traditional students. Furthermore, CBE could be a way to reduce the cost of higher education by allowing individuals with relevant work experience to complete their degrees faster (Kamenetz, 2013; Kelchen, 2015).

Loudon University does not use adjunct instructors as contingency faculty. Rather, most of the faculty (approximately 90 percent) are adjunct instructors, who are working professionals in the disciplines in which they teach. Instead of using inexperienced graduate assistants to teach undergrad courses as some colleges do, Loudon's philosophy is that students in career-oriented programs should be taught by practitioners who are working in the positions to which the students aspire. Although very few of the adjunct faculty are professional instructors, many have taught classes for their full-time employer or at other colleges. Loudon offers workshops and short courses to help both new and experienced instructors develop and hone their teaching skills. Many of Loudon's full-time faculty members had prior careers and were adjunct instructors when they started teaching.

To help students complete their degrees faster, classes are offered year-round in six seven-week blocks or three 15-week trimesters. In addition, modular courses are completed in one month by meeting on weekends. The College of Business at Loudon University also has accelerated five-week courses. To make it convenient for students, most onsite classes meet for an extended period just once per week. The majority of onsite classes are offered in the evenings or on weekends to accommodate the schedules of adjunct faculty and working students. The University has no large lecture halls—the average class size is under 17 students. Learning outcomes, similar to competencies, are well defined for each course and degree program, and overall competencies are specified as requirements for graduation.

Except for student aid, the University does not accept any federal funding—no grants or other monies. As a private institution, Loudon does not receive state subsidies.

Because Loudon is not a research university, it has no revenue from research activities. Ninety-five percent of its income is from tuition, with the rest from contributions, investments, and revenue from business services (*Our Story Unfolds*, 2015). Since Loudon is dependent on tuition, it keeps costs and tuition low by using adjunct instructors and avoiding expensive facilities. There are two small campuses in commercial districts, and classroom space is rented at other sites, primarily from community colleges where there are articulation agreements. In addition to offering low tuition, Loudon is very focused on providing convenient ways for students to receive an education. That is why courses are offered at 14 locations and online—at various times during the day, evening, and weekends—with term lengths that range from one month to a full semester. Convenience for post-traditional students is a major reason why Loudon decided to offer an online, self-paced CBE degree.

Site Access

Permission to conduct this case study was obtained from the Institutional Review Board (IRB) at Drexel University and from the Human Subjects Review Committee (HSRC) at Loudon University. The sample population for this study included only employees at Loudon. The assistant vice president of Academic Affairs approved the site access for the research.

Research Methods

Merriam (2009) stated a qualitative case study must be based on a bounded system. In this case, the bounded system was a single university, specifically the employees who worked on designing new competency-based undergraduate degree programs for the College of Business and the College of Health Professions. This

research involved conducting interviews and reviewing physical data artifacts, data collection methods described by Yin (2014) as common for case studies. One-on-one interviews were held with the key decision makers to identify why they made certain choices in the design of the new CBE program. The physical artifacts included e-mails, letters, design documents, meeting minutes, internal reports, and presentation materials associated with the CBE design decisions. In addition, the artifacts included the physical evidence of the implementation of the new competency-based programs, such as online learning modules and new administrative policy statements. The artifacts were cross-checked with the findings from the interviews. The timing for the data collection follows, as well as more details about each type of data collection method.

Stages of Data Collection

The timeline for the research was eight months. The research began in February 2016 after approval of the Drexel IRB and Loudon HSRC. The first step was to examine an archive of meeting minutes related to CBE dating back to 2013 to understand what decisions were made early in the design of the new program. The interviewing process took two months. A transcription service that had a nondisclosure agreement was employed to transcribe the interviews as they were completed. Coding and analyzing the transcripts of the completed interviews happened in parallel as new interviews were underway. A second review of the physical artifacts was performed in more detail after the interviews. Documenting the findings, the conclusions, and the recommendations took three months. The final revisions and the defense of the dissertation took an additional two months. The complete timeline is shown in Figure 3, after which the next

several subsections describe in more detail the research methods associated with the interviews and physical artifacts.

Timeline	Months								
Tasks	0	1	2	3	4	5	6	7	8
Obtained Drexel IRB and Loudon HSRC approval	■								
Reviewed archive of meeting minutes		■							
Identified and did initial review of physical artifacts		■							
Scheduled and conducted interviews		■	■						
Transcribed and coded interviews		■	■	■					
Reviewed physical artifacts in more detail				■	■				
Analyzed findings and investigated conflicting data				■	■	■			
Documented findings, conclusions, recommendations						■	■	■	
Finalized revisions and conducted defense								■	■

Figure 3. Data collection and analysis timeline.

Description of Interviews

A general interview guide, which involved having a fixed set of questions or issues to be discussed (Patton, 2002), was used for this research. The interview guide ensured the same topics were covered in each semi-structured interview, but allowed the researcher to explore and probe specific topics in more detail. This flexibility was needed since the five subunits in the case study had very different areas of responsibilities.

Instrument description.

The general interview guide, shown in Appendix B, lists the questions asked. Most of the questions were tested in a pilot project conducted in early 2015 with two of the academic program chairs in the College of Arts and Sciences. The general and

open-ended questions allowed the pilot study participants to focus on the decisions they thought important to the future success of the new CBE degree. Although this researcher was interested in why certain decision were made, "why" was not one of the specific interview questions because the participants might have interpreted such a direct inquiry as the interviewer questioning their judgment rather than exhibiting curiosity about the reasoning behind a decision. If participants thought their judgment was being second guessed, they might have become defensive in their answers. Asking the questions in a general way worked well—the participants seemed to feel comfortable about giving open and honest answers.

Participant selection.

The research included five subunits: (a) the College of Business, (b) the College of Health Professions, (c) the College of Online and Experiential Learning, (d) the directors from administrative and operational support units, and (e) the deans and executive team. The selection of the individuals interviewed was done using critical case sampling, which involved choosing participants who were able to provide specific insights into the phenomenon being studied (Onwuegbuzie & Leech, 2007). The six employees interviewed in the College of Business were the assistant dean, the four program chairs who are responsible for the new CBE business-related content, and the online coordinator. The academic program chair for nursing in the College of Health Professions and the full-time faculty member who conducted the CBE analysis for that college were interviewed. One of the academic program chairs in the College of Arts and Sciences, who has responsibility for the statistical course used in the College of Business, was also included in the study. In the College of Online and Experiential Learning, the

online manager, online director, assessment manager, and educational technology director were part of the research sample because they were responsible for facilitating online programs, including online CBE programs. The four administrative directors in the sample were accountable for: financial aid, student billing, the registrar's office, and faculty development. These directors needed to decide how the new self-paced CBE program would be operationalized within their areas of responsibility. The executive team members who were interviewed were the vice president and assistant vice president of Academic Affairs, the chief financial officer, the senior vice president of Administrative Affairs, the chief accreditation officer, and the president of the University. In addition, the deans in the College of Business and the College of Arts and Sciences were interviewed to understand the decisions associated with the HR management and general education modules in the new CBE program. The deans and executive team were included in the sample because they were accountable for the strategic and financial decisions associated with the competency-based initiative.

Identification and invitation.

The key decision makers in each subunit, identified through critical case sampling, were personally asked by the researcher to participate. Because many decisions associated with this research were made in collaborative meetings, when individuals elected not to be part of this study, other people who were in the decision-making meetings were interviewed. The deans in the College of Health Professions and the College of Online and Experiential Learning declined to be interviewed because they were not directly involved with the CBE efforts. Instead, the individuals in their organizations who were more intimately involved in the CBE work

participated in the study. In-person interviews were conducted because the sample population was located at the same site as the researcher.

Data collection.

The interviews were recorded using an application on the researcher's personal iPad and uploaded from the iPad to a secure Dropbox to be transcribed by a service that had a nondisclosure agreement. Since this case study was not the type of research where a person's first response was likely to represent the individual's true feelings, the participants were given a chance to correct or update their responses after they were transcribed and before they were analyzed. This procedure helped ensure the accuracy of the participants' responses. Two participants made minor changes to the transcripts.

Data analysis.

For this explanatory case study, an inductive approach in conjunction with the conceptual map was used to identify themes about why certain decisions were made in the design of the CBE program. Open coding, which is useful for interpreting phenomena (Corbin & Strauss, 1990), was used to analyze the design decisions. Coding was done using the QSR NVivo software. New codes were created as fresh information emerged in the analysis. There may have been multiple reasons why particular decisions were made, so multiple codes were sometimes assigned to the same decision. Yin (2014) noted that analyzing explanatory case studies is an iterative process. Corbin and Strauss (1990) suggested looking for similarities based on actions and interactions to organize the codes into categories or themes. The themes were used to answer the research questions about why certain decisions were made. In the pilot study conducted in early 2015, it was interesting that convenience for students was not a theme that emerged, although that

is one of the main reasons Loudon decided to develop a CBE program. Evidently, that strategic decision to offer CBE as a convenient option for students was not well understood by the program chairs interviewed in the pilot study. Therefore, the strategic decisions were probed in more detail during this research. In addition to coding the interviews, physical artifacts were reviewed to check against the data collected in the interviews.

Description of Artifact Review

The physical artifacts for this case study were those items created as a result of the process for deciding to develop a competency-based degree and the design decisions for the new CBE program. Three years of minutes from the Faculty Senate were retrieved and analyzed. The minutes and meeting presentation materials provided documentation of the decision-making process to pursue CBE and the requirements for the design of the competency-based program. The report created as part of the two-year self-study process for regional reaccreditation provided background data on the institution. The studies conducted by and the meeting minutes documented by the College of Online and Experiential Learning provided information on competency-based and experiential learning initiatives that occurred in parallel with the CBE program development. The online learning modules and assessments created for the new program were evidence of the academic design decisions. The policies for the new self-paced program were substantiation of the administrative decisions.

In addition, the assistant vice president of Academic Affairs and the academic chair of the HR Management program had archives of documents dating from early 2013 about implementing the new competency-based HR degree. One of the faculty members

in the College of Nursing also kept an archive of the early design work done for a potential CBE degree in nursing. All new CBE initiatives must be approved by the appropriate accrediting authority before the program may qualify for federal student aid (Council of Regional Accrediting Commissions, 2015; IFAP, 2013a), and these archives were retained to answer questions that might arise during the regional accreditation process. This researcher used the documents in these archives to trace some of the early decisions and to cross-check the transcripts of the interviews. In addition, e-mails and letters from the regional accreditor provided direction for the design of the CBE program. Because the design of the CBE programs happened over a three-year period, participants in the interviews had forgotten some early decisions. Documentation from the archives was sometimes used during the interviews to refresh the participants' memories. Additionally, the College of Business provided a presentation on CBE that it had given at a conference sponsored by its professional accreditor. That presentation and the self-study report the College submitted to its professional accreditor were included in this research.

Instrument description.

An electronic repository was created for the physical artifacts. After reviewing the artifacts that were documents, a copy of the document was saved in the repository. If the document was updated during the research period, multiple versions were saved. Screenshots were taken of the online learning modules and saved in the repository.

Participant selection.

A subset of the online learning modules was selected for review. The sample included modules suggested by the instructional designers as being representative of the

new degree programs. This was a form of critical case sampling (Onwuegbuzie & Leech, 2007). For the other physical artifacts, all of the revised policies and Faculty Senate meeting minutes for the three-year period of the study were reviewed, not just a sample. If the Senate minutes indicated a presentation on CBE had been given during the meeting, a copy of that presentation was retrieved and added to the electronic repository for this research.

Identification and invitation.

The individuals in the sample population were asked to identify artifacts associated with the new competency-based degrees. This was how the researcher became aware of the document archives created by the College of Business and the College of Health Professions. In addition, the researcher searched the Loudon intranet site for relevant documentation. The researcher also noted policy changes that resulted from the CBE program.

Data collection.

The online coordinator for the College of Business provided access to the CBE learning modules in Blackboard. Published policy changes and the College of Online and Experiential Learning documents were available on the Loudon University intranet. The Faculty Senate minutes and presentation materials were downloaded from the Blackboard system at Loudon. The chair of the HR Management program provided access to his Dropbox account to retrieve the documents associated with the CBE program design. The assistant vice president of Academic Affairs provided a hardcopy of an archive of meeting minutes and documents. The archive of documents associated with the early design of a CBE degree for nursing also was provided in a hardcopy format.

Data analysis.

The archive of meeting minutes from Academic Affairs regarding the competency-based degree was reviewed in detail at the beginning of this study, and then examined a second time, in more detail, after the interviews. The other artifacts were reviewed throughout the study, as specific documents were identified. The data from the artifacts, including the archive of meeting minutes, were used to check the findings from the interviews.

Quality of Research

After evaluating all the information from the various sources, multiple approaches were used to validate the findings. Since several people in each subunit were interviewed, the interviews were cross-checked with each other. In addition, the findings were checked against the minutes from meetings on particular subjects and with other physical artifacts using a process known as triangulation—using multiple methods and multiple sources to validate the data (Creswell, 2012). If there appeared to be a contradiction, the researcher followed up with the individual participants. For instance, after cross-checking an interview transcript with an e-mail from the regional accreditor, the researcher requested a clarification from the chief accreditation officer regarding one of the CBE accreditation requirements that had not been clearly specified in the e-mail.

Using a process called member checking (Creswell, 2012), a hardcopy of each individual transcript was hand-delivered to each participant for review. Two of the participants requested minor changes, which were made to the transcripts. In addition, the participants were invited to a two-hour meeting where the researcher reviewed the preliminary findings. At that meeting, there was no disagreement on the key findings,

however the participants felt the effort to define sub-competencies for the CBE degree was not sufficiently emphasized. The sub-competency work was added to the details in the study. Because the academic program chair for the CBE degree in HR Management was not present at the two-hour review, the researcher followed up with him individually. He had no additional changes to the findings. The participants were also provided a written report of the findings for their review. Two participants noted the stated reasons for choosing the HR Management program versus the one in accounting for the first CBE degree were not entirely accurate. The researcher sent revised wording to those two individuals to confirm the restated reasons were correct. The rest of the feedback from the written review involved minor wording changes and clarifications, all of which were made to the final report. This process of member checking helped ensure the data evaluated were not misinterpreted or mischaracterized.

Ethical Considerations

The Drexel University IRB and the Loudon University HSRC granted permission to conduct this research. Only employees at the University were included in the sample population. The discussion that follows describes the ethical and confidentiality considerations used to avoid injuring any parties.

All of the interviewees were Loudon University employees who were clearly informed of the purpose of the research and told that the interviews were to be recorded. The potential subjects were free to choose not to participate. Those who agreed to be interviewed signed a consent form stating they could opt out at any time. All interview materials were kept strictly confidential and the participants were not named in the study. Audio recordings were made of the interviews using the researcher's personal Apple

iPad. The recordings were stored on the researcher's iPad and backed up to the researcher's personal Dropbox account, both of which are encrypted and password protected. QSR NVivo software on the researcher's personal computer, not Loudon University equipment, was used to store and code the transcripts. The audio recordings and transcripts were protected with different passwords. A transcription service that had a nondisclosure agreement transcribed the findings. Any off-the-record remarks were deleted from the transcripts. However, if the same information was available from another source, such as meeting minutes, it was included in the research from that particular source.

Although participants' names were not used in the research, Merriam (1998) noted insiders familiar with the case may be able to recognize the participants even when names were not used. Since many of the decisions made regarding the new CBE degrees were done in a collaborative way, several insiders already knew who made which ones. To avoid embarrassing any of the participants about the choices they made, they were given an opportunity to review the research before it was published. The intent of this study was to determine why certain decisions were made, not specifically who made particular ones. Therefore, any insider details inadvertently revealing individual participants in a way they found objectionable were removed. However, since it was the responsibility of this researcher to present all the findings, initial decisions that were made and later revised were reported, so the reader had a full, rich understanding of why certain approaches were chosen.

Summary

This research was a qualitative case study of the decisions involved in the design of new competency-based undergraduate degrees at Loudon University, a private, nonprofit institution in the Eastern United States. The research explored the internal and external factors described in the conceptual map as influencing those decisions: (a) the university's operating model, (b) the requirements for professions, (c) the principles of CBE, and (d) the regulatory environment. The site population was comprised of the employees who made the design choices for the new CBE program. This included five subunits of personnel: (a) the College of Business, (b) the College of Health Professions, (c) the College of Online and Experiential Learning, (d) the administrative directors in the operational support units, and (e) the deans and executive team. In addition to interviewing multiple key personnel in each of the five subunits, the research involved an analysis of physical artifacts including meeting minutes, presentations, e-mails, letters, policy documents, internal reports, and online learning modules. All of the data was kept confidential and the identities of the participants were protected. The next chapter reports the findings from this case study, which are intended to explain why certain choices were made in the design of the CBE program.

CHAPTER 4: FINDINGS, RESULTS, AND INTERPRETATIONS

This qualitative case study examined the decisions in the design of a CBE degree for post-traditional students at Loudon University, a private, nonprofit institution. Dr. Payne, the assistant vice president of Academic Affairs, described the three-year CBE initiative as exploring uncharted territories because the federal guidelines for student financial aid and the regional accreditation requirements for CBE continued to evolve as the work at Loudon was underway (Council of Regional Accrediting Commissions, 2015; IFAP, 2013a; IFAP, 2014). Without a road map to follow, Loudon struggled to design a competency-based degree that would help to deliver on the University's mission, satisfy external regulatory requirements, and meet the constraints associated with the internal economics and policies. To avoid taking a wrong turn when defining competencies, the University decided to use a widely accepted, existing competency model. Thus, the HR Management degree, based on the Society of HR Management (SHRM) competencies, was chosen for the first CBE program. However, Loudon did not explore whether employers or prospective students would be interested in a CBE degree in HR.

As the design of the CBE program in HR Management for undergraduates in the College of Business was underway, there were conflicting internal priorities that affected the work. Like a helix with multiple strands, the timeline for the CBE effort was intertwined with the reaccreditation of the University's traditional academic programs and the creation of the new College of Online and Experiential Learning (COEL) at Loudon. The University did not seek accreditation for the CBE degree until the decennial reaccreditation of Loudon's traditional degree programs was assured. However, when Loudon requested accreditation for the CBE program, it learned the requirements from

the regional accreditor had changed. Meanwhile, COEL introduced new experiential learning options, based on workplace competencies, into Loudon's traditional programs. The COEL initiatives somewhat mitigated the value of a separate CBE degree. After the competency-based program was created and piloted, Loudon found there was little interest from students in the newly developed degree. The University also realized that its existing student information and financial aid systems could not support a self-paced program. Given those issues, Loudon has not initiated the substantive change review that is required for accrediting new CBE programs. Although the new HR Management degree has been put on hold, the CBE work has been the catalyst for competency-based learning changes in the traditional academic programs at the University, as will be described in the results and interpretations section of this chapter.

This case study focused on why a private, nonprofit university decided to design a self-paced CBE program in a particular way as an option for post-traditional students seeking career-oriented degrees. The research answered the following questions:

1. How does the mission of the university, to provide open access to career-oriented degree programs for adults of all ages, influence the decisions associated with offering CBE?
2. How is the regulatory environment impacting decisions related to the design of the new CBE degree programs?
3. How do the internal economics and policies of a private, nonprofit university affect the program content, design, and implementation decisions of a CBE program?

The researcher created the timeline shown in the next section to depict the key events during the three-year period associated with this case study. The timeline includes internal events that influenced the design the competency-based degree at Loudon as well as external events within the higher education regulatory environment for CBE. The findings section, after the timeline, describes the key design decisions. Although there were probably hundreds of decisions made during the three-year timeframe for this study, the decisions reported as findings are those where the choice between various alternatives resulted in a significantly different direction for the CBE program. Each decision, reported as a key finding, involved a choice that caused Loudon to go down a particular path with the CBE design. After the findings are presented, the subsequent section focuses on the results and interpretations of this case.

Case Study Timeline

This case study spanned three years and understanding the timing is important because the changing guidelines from the U.S. Department of Education and the varying interpretations of that guidance by the regional accreditor affected the decisions Loudon made for the CBE program. The timeline, shown in Figure 4, begins with the first discussion of CBE at Loudon's Faculty Senate in February 2013. It ends when the Loudon Administrative Cabinet removed CBE from the institutional priorities list in May 2016. External events in the higher education regulatory environment are depicted on the left side of the timeline in Figure 4. Internal events at Loudon University, including those associated with COEL and the decennial reaccreditation effort, are shown on the right side. The government building icon denotes activities at the U.S. Department of Education. Internal and external events related to accreditation are designated by the seal

of approval symbol. The mortarboard icon represents actions initiated by the University. The events in the timeline are grouped into three time periods: (a) the initiation of the CBE activities, (b) the design and development of the CBE program, and (c) the CBE pilot and the implementation of new policies that incorporate aspects of competency-based and experiential learning into the traditional degree programs. The next three subsections describe the key events in each of the three time periods.

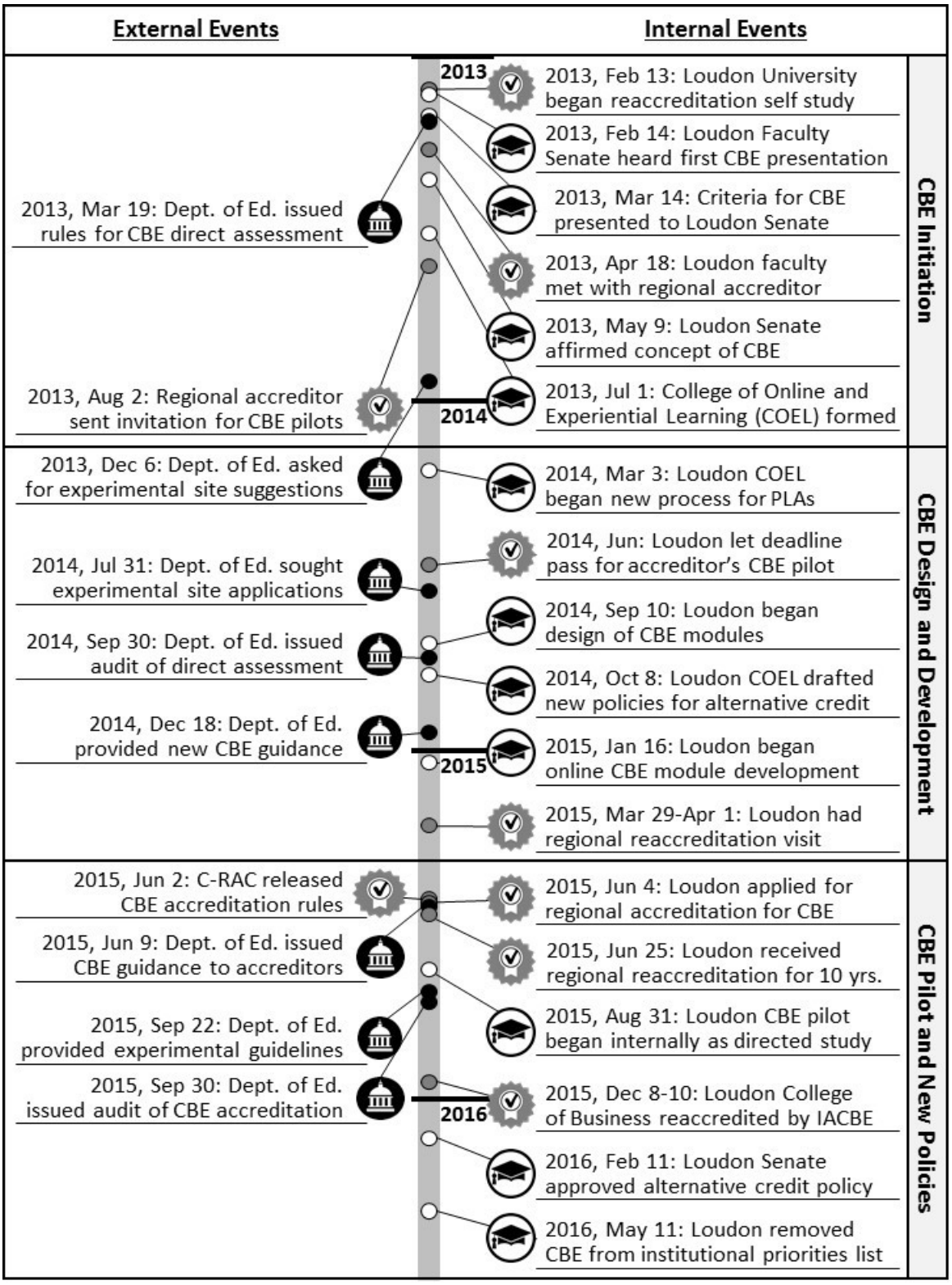

Figure 4. Timeline of key events. The government building icon denotes actions taken by the U.S. Department of Education. Events associated with accreditation are designated by the seal of approval symbol. The mortarboard icon represents activities initiated at the University related to competency-based pursuits.

Phase 1—CBE Initiation

Two events occurred on consecutive days in February 2013 that led to multiyear projects: the kickoff meeting for the reaccreditation self-study sub-teams, followed by the first discussion of CBE at the Loudon Faculty Senate. The decennial reaccreditation of the University was scheduled for early 2015, and the kickoff meeting was the beginning of two years of preparatory work. Reaccreditation was Loudon's top priority, and everything else was secondary, including the CBE work. Typically, the reaccreditation process includes a self-study evaluation report that is reviewed and validated by the accreditors. The self-study report is an introspective examination of the institutional processes and academic policies at a university, based on the standards set by the accrediting authority. Loudon decided to begin the self-study process two years prior to the planned reaccreditation date. Coincidentally, on the day after the kickoff meeting for the reaccreditation sub-teams, the Loudon Faculty Senate began discussions on CBE. The exploration of CBE, over a three-year period, resulted in the design and development of a new, competency-based undergraduate degree program. However, Loudon delayed seeking accreditation for its CBE degree until the reaccreditation of its traditional programs was assured. Once Loudon applied for accreditation of the new degree, it discovered the regional accreditor's requirements had changed. Loudon has yet to complete the accreditation process for the CBE program.

On the day after the February 2013 reaccreditation kick-off meeting, the Loudon Faculty Senate met. At that point in time, Dr. Quigley, the vice president of Academic Affairs, had been in the position for just over a year. He had replaced the well-respected provost who had been with the University for 26 years—more than half the lifespan of

the institution. At the February Senate meeting, Dr. Quigley presented the changing landscape of higher education. He discussed self-paced CBE initiatives at other universities and disruptive technologies, such as massive open online courses (MOOCs). He referenced "Cracking the Credit Hour," an article by Amy Laitinen in which she argued the amount of time spent in class was not a good way to gauge student learning. He ended by stressing Loudon's mission was to provide career-oriented curricula and individual attention to students. That formal presentation, using 17 prepared slides, was unusual because normally the head of Academic Affairs just reported University news at Senate meetings. It was clear Dr. Quigley was laying the groundwork for significant changes that could affect higher education. That presentation was the first of several about CBE at the Faculty Senate over a four-month span.

As a follow-up to the material presented by Dr. Quigley, at the next month's Senate meeting in March 2013, the dean of the College of Technology gave a presentation titled "Competency Based Learning—Modality Concepts." He started by stating competency-based learning included experiential learning. He also noted competency-based learning must be adaptable to the University's current systems. The general concept that was presented was to dissect existing courses into competencies and assessments, and then to assemble those competencies and assessments into a new CBE degree program. The dean asserted internships, cooperative learning experiences, prior learning assessments (PLAs), transfer credits, and self-paced courses could be bundled together to meet the requirements of earning a professional degree. In addition, competency-based learning at Loudon, which the dean called a new modality, had to satisfy the student's needs in four areas: (a) financial aid, (b) employer tuition

reimbursement, (c) employer and graduate school transcript requirements, and (d) credits that could be transferred to other institutions. These four requirements would become the basis for the key decision to design a credit-based CBE degree, rather than use the direct assessment approach.

On March 19, 2013, just five days after the March Faculty Senate presentation, the U.S. Department of Education issued guidelines on how CBE direct assessment programs could qualify for federal student aid (IFAP, 2013a). The title of the "Dear Colleague" letter: "Applying for Title IV Eligibility for Direct Assessment (Competency-Based) Programs," conflated direct assessment and competency-based programs, rather than stating direct assessment programs were one form of CBE. The letter did not mention other types of CBE, but concentrated on the rules for direct assessment:

> Under current regulations, the entire program must be provided by direct assessment. Those offered partially with credit or clock hours and partially via direct assessment are not eligible programs. … Instead of using credit hours or clock hours as a measure of student learning, instructional programs may use direct assessment of student learning, or recognize the direct assessment by others of student learning. (IFAP, 2013a, para. 4-5)

The letter reiterated the current regulations that federal student aid cannot be used for PLAs:

> Federal Student Assistance (FSA) funds may be awarded only for learning that results from instruction provided, or overseen, by the institution. FSA funds cannot be awarded for any portion of the program based on study or mastery obtained prior to enrollment in the program, or based on tests of learning that are not associated with educational activities overseen by the institution. (IFAP, 2013a, para. 5)

The Department of Education clearly specified direct assessment CBE had to apply to an entire academic program; mixing credit hours and direct assessments was not allowed. Furthermore, contrary to the notion presented at the March Faculty Senate meeting that PLAs and self-paced competency-based courses could be bundled together

in pursuit of a degree and financed through federal student aid, the Department of Education made it clear federal monies could not be used for PLAs. The Council of Regional Accrediting Commissions (C-RAC) later clarified that neither transfer credits nor PLAs were allowed in direct assessment CBE—students must demonstrate competencies while in direct assessment programs, rather than being credited with competencies based on prior experiences (Council of Regional Accrediting Commissions, 2015). C-RAC did not explicitly state that PLAs were permissible in credit-based CBE (Council of Regional Accrediting Commissions, 2015), although the Council for Adult and Experiential Learning (CAEL) asserted PLAs were allowed in credit-based programs (CAEL, 2015). The decision to exclude PLAs in the CBE program at Loudon University would later have a significant impact when that competency-based initiative was piloted.

In April 2013, the University president was at the monthly Faculty Senate meeting to introduce one of the commissioners from the regional accreditor. In addition to doing that, he thanked the Senate for its work reviewing competency-based learning initiatives at the prior two Senate meetings. At the April meeting, the academic chair of the Information Systems Management degree program showed how two existing online courses could be disaggregated into competencies within the University's learning management system, Blackboard. This demonstrated the current learning management system could work for self-paced CBE. Leveraging the existing systems infrastructure was one of the goals stated in the March 2013 Senate presentation on CBE. The fact that the current learning management system could be used for a self-paced program would become important when the CBE degree was developed and piloted. In addition to the systems demonstration, this meeting was significant because the commissioner from the

regional accrediting authority, who was introduced at the meeting, learned Loudon was considering a competency-based degree.

Following the CBE presentations at the prior three monthly Faculty Senate meetings, in the May 2013 assembly of the Senate, Dr. Quigley asserted changes in higher education related to competency-based learning "strike at the heart of the scholarship of teaching as we seek to adapt, grow, and change as facilitators of learning and, in fact, as a faculty" (*Faculty Senate*, 2013, p. 4). Based on the groundwork that had been laid for competency-based learning in the earlier meetings, Dr. Quigley asked the Senate to affirm the following:

> The Faculty Senate recognizes that we currently practice competency-based learning assessment in numerous ways such as the prior learning process. We fully embrace the acceleration and expansion of these practices in order to better serve our students and to facilitate their learning. (*Faculty Senate*, 2013, p. 5)

The statement was affirmed by a voice vote, without any discussion; there were no abstentions or objections (*Faculty Senate*, 2013). Because there was no discussion before the vote, it was unknown if the Senate members were clear about what they had affirmed. After the CBE degree was developed, Dr. Quigley stated: "I was pushing, trying to make it, and then came to realize … it was much more complicated than we thought" (Interviewee 17, personal interview, March 14, 2016). Given that creating a CBE degree was harder than Dr. Quigley had anticipated, it was probable the Senate members did not realize the effort associated with designing self-paced, competency-based programs because CBE was so new to Loudon University.

The May Faculty Senate meeting was the last one for the academic year. However, on June 12, 2013, Dr. West, the president of Loudon University, announced via e-mail the creation of the new College of Online and Experiential Learning (COEL):

> The College of Online and Experiential Learning will allow the University to more easily translate students' experience, either in their careers or from new technologies and educational innovations like massive open online courses (MOOCs), into earned credit toward their degrees. … Please join me … in celebrating this latest example of [Loudon] University's mission in motion for the benefit of our students and our future as an institution for higher education. (Office of the President, personal communication, June 12, 2013, p. 1)

Although the formation of COEL followed the Faculty Senate affirmation of competency-based learning in May 2013, there was no mention of CBE in the announcement from the president. Nonetheless, given the timing, it seemed a new college focused on experiential learning might have been formed to offer new, competency-based degrees since the March 2013 Senate presentation stated experiential learning was one form of competency-based learning. Furthermore, other universities had created separate units to offer CBE degrees (Clerkin & Simon, 2014). However, COEL does not have its own degrees—its role has been to support the six colleges with degree programs at Loudon. President West explained forming COEL this way: "Faculties want to move very slow. They have to compromise. Lifelong learning people know the technical stuff, where the faculty has the standard things, so they compromise; they compromise so it moves to the right place" (Interviewee 23, personal interview, March 24, 2016). Given that, COEL has been the driving force behind the policy changes to award college credit within the traditional degrees at Loudon for experiential learning and external certifications, often based on workplace competencies. This was done in parallel with the design of the CBE degree in HR Management by the College of Business.

In August 2013, after a commissioner from the regional accreditor had heard the presentation on CBE at the April Faculty Senate meeting, the accrediting authority invited Loudon to participate in a CBE direct assessment pilot (E. H. Sibolski, personal

communication, August 2, 2013). Although the University had been considering developing CBE programs for multiple degrees, the regional accreditor specified only one degree program could be included in its CBE pilot (E. H. Sibolski, personal communication, August 2, 2013). Dr. Ingram, dean of the College of Business, explained the existing HR Management program was chosen to be redeveloped in a CBE format for the pilot because SHRM had already defined competencies for the HR profession (Interviewee 9, personal interview, February 29, 2016). SHRM had recognized Loudon as being fully compliant with the its competencies and had officially authorized the University to provide courses to prepare for SHRM certification exams. Other more popular degrees, such as accounting, had been considered for redesign in a CBE format. However, the accounting competencies defined by the American Institute of CPAs generally were not developed through workplace experiences because typically a degree was required before being allowed to work in the accounting field. On the other hand, individuals could develop some of the SHRM competencies on the job without a degree in HR. Thus, the HR Management undergraduate program was chosen for the first CBE degree because the program was officially recognized by SHRM, and individuals might enroll in the new competency-based degree with some relevant HR experience.

The invitation letter from the regional accreditor contained four pages of requirements needed to submit a degree program to become a CBE pilot (E. H. Sibolski, personal communication, August 2, 2013). There were nine categories of information that had to be provided, but there were about two dozen more subcategories. For instance, the accreditor wanted to know in detail how the CBE program would be

administered and what support systems would be available to assist the self-paced students. In addition, there were several questions about why a CBE program was being developed and how academic quality was going to be assured. Different members of the Loudon leadership were assigned one or more tasks to provide answers to the accreditor. The deadline for participating in the pilot was June 2014. Although the University focused on meeting the detailed requirements for the accreditor's pilot, it had yet to decide what type of CBE program it wanted to develop.

Phase 2—CBE Design and Development

The criteria presented at the March 2013 Faculty Senate meeting provided a framework for the choices Loudon made in crafting its CBE initiative. The competency-based program had to satisfy the student's needs in four areas: (a) financial aid, (b) employer tuition reimbursement, (c) employer and graduate school transcript requirements, and (d) credits that could be transferred to other institutions. These criteria led to a key decision to develop a CBE program that retained credit hours, rather than designing a direct assessment program. Dr. Quigley described that decision as one of the most critical ones because it provided the foundation for the other CBE design decisions (Interviewee 17, personal interview, March 14, 2016). Dean Ingram in the College of Business felt the decision to retain credit hours was important because both students and employers were familiar with credit hours (Interviewee 9, personal interview, February 29, 2016). For instance, employers often required a transcript with credit hours and grades when hiring a new worker or before providing tuition reimbursement to a current employee. Furthermore, Dr. Ingram noted federal student aid was based on credit hours. Direct assessment CBE programs that track only competencies, not credit hours, must

show how those competencies could be translated into credit or clock hours to qualify for federal student aid (IFAP, 2013a).

In addition to the decision to use credit hours, the CBE initiative was positioned under the category of academic quality in the institutional priorities for fiscal year 2013-2014. Other institutions have touted CBE as a way to provide a high-quality education at a low price and, thereby, control the rising cost of a college degree (Kamenetz, 2013). At Loudon, the focus was on quality because tuition was already relatively low. The emphasis on quality was consistent with the general intent of CBE, which was to improve career-oriented higher education by incorporating in the curriculum the competencies future professionals will need on the job. President West believed new types of degrees had to be high quality, meaning academically rigorous, to be accepted by employers (Interviewee 23, personal interview, March 24, 2016). Since Loudon offered only career-oriented degrees, acceptance of the academic programs by employers was critical for enticing career-minded students to enroll in Loudon's programs. Furthermore, the regional accreditor was concerned about the quality of the CBE degree (E. H. Sibolski, personal communication, August 2, 2013), and Loudon wanted to make sure the new degree would be accredited. Therefore, when designing the CBE degree, Loudon focused on quality and academic rigor rather than reducing costs.

Although the CBE design work was progressing at Loudon, the University was not ready by the June 2014 deadline to participate in the pilot proposed by the regional accreditor. For instance, no program content had been developed—in CBE programs, three-credit courses are typically replaced with smaller learning modules to make it easier for students to tackle the coursework at their own pace. In addition, since CBE was new

to Loudon, the University was still trying to address all the details required by the accrediting authority for administering the program. For instance, the accreditor wanted to know how self-paced students would be supported in their studies and how academic quality could be assured. Given that Loudon was not ready, in spring 2014, the Loudon leadership told the accreditor they would pass on the pilot.

Loudon began the design of the content for the CBE modules for HR Management in September 2014. By that time, the University had made most of the strategic decisions about the academics for the new self-paced, CBE degree. For the general education subjects, like math and English, Loudon contracted with a third party for online, self-paced courses. For the HR subject matter, the SHRM competencies were broken down into sub-competencies, so Loudon could create a learning module for each sub-competency. The self-paced program would retain credit hours, and when the assessments were completed in each learning module, students could earn one credit. Each HR subject area would include pre- and post-tests; plus, each one-credit learning module within a subject area would contain project-based assessments based on true-to-life HR scenarios. Completing all the HR assessments meant the student had demonstrated all of the competencies defined by SHRM.

After spending four months designing the content for the CBE learning modules, the actual online development work commenced in the Blackboard learning management system in January 2015. The subject matter experts in the College of Business worked with the online learning experts in COEL to create the CBE modules. Although different instructors contributed to various HR modules, all the development work was coordinated by a single instructional designer; therefore, the entire online program had a consistent

look and feel (Interviewee 2, personal interview, February 22, 2016). The intent was for the online learning modules for the new degree to be completed in time for enrollment in fall 2015.

Design of CBE degree for nursing.

In addition to the new degree for HR Management, Loudon explored the possibility of developing a CBE degree for nursing undergraduates (Interviewee 14, personal interview, March 10, 2016). Similar to the external competencies from SHRM that were used for the HR Management degree, the plan was to use the nursing essentials from the American Association of Colleges of Nursing (AACN) as the basis for the competencies in a CBE nursing degree. The competency-based degree was intended to be a self-paced option to complement the existing Registered Nurse (RN) to Bachelor of Science in Nursing (BSN) completion degree. In addition to building on the work of the AACN, external certifications in specialty areas for nurses would be incorporated into the degree (Interviewee 3, personal interview, February 23, 2016). However, the nursing essentials had not been revised since 2008 (American Association of Colleges of Nursing, 2008), and Loudon decided to defer the design of a new nursing CBE degree until updates were made by the AACN. While the CBE design work was underway, COEL was pursuing ways to incorporate online and experiential learning into the existing degree programs, as described below.

Other competency-based initiatives.

After COEL was formed in July 2013, it looked for opportunities to enable students to earn credit through alternatives to the traditional classroom. In March 2014, COEL implemented a new process to encourage more students to complete competency-

based PLAs. In the new initiative, students could enroll in a three-credit course, provided by a third party, in which they learned how to create portfolios. As part of the three-credit course, students could have their portfolios of prior learning assessed to earn up to three more credits. In other words, students could get six credits for the price of three. Furthermore, federal student aid could be employed to pay for the portfolio course, whereas it could not be used to pay for separate PLAs. In addition, COEL drafted new policies to provide ways competency-based assessments, such as professional certifications, could earn course credit. As shown on the timeline in Figure 4, these policies were submitted for review to the University in October 2014. The practices for awarding credit for external certifications had already been implemented by COEL—the official policies however lagged behind. Also, the new policies included experiential learning through cooperative education assignments. These proposed changes would incorporate aspects of workplace learning into traditional degree programs at Loudon University.

U.S. Department of Education audit of CBE.

As Loudon was pursuing new competency-based learning options through the policies proposed by COEL and designing its approach to CBE for HR Management, the Inspector General of the U.S. Department of Education issued a scathing audit report on September 30, 2014 regarding the CBE direct assessment programs that had already been approved by regional accreditors and were receiving federal student aid (Howard, 2014). The Inspector General specifically criticized the process used by the regional accreditors for evaluating the CBE programs. Most notably, the audit questioned whether the direct assessment programs met the definition of distance learning under federal law, or if they

should be classified as correspondence programs, which significantly reduced the amount of federal student aid that might be awarded. The auditor questioned whether there was regular and substantive interaction between students and faculty, which was required for distance learning programs in the federal regulations. If all contacts with faculty members were initiated by the student in self-paced programs, that did not meet the standard for regular and substantive interaction. Furthermore, the audit questioned whether staff members who normally interacted with students in some CBE direct assessment initiatives met the criteria for faculty, if they taught no classes or gave no lectures as part of their university duties. The audit inferred they played more of an academic advisor role than a classic instructor role (Howard, 2014). Loudon made a note of the requirement for substantive and regular interactions with faculty as it continued to design its CBE program. Meanwhile, the U.S. Department of Education worked to address the issues raised by the Inspector General.

New CBE guidance from the U.S. Department of Education.

Three months after the CBE audit and more than a year and a half after the original "Dear Colleague" letter on direct assessments, the U.S. Department of Education issued new guidance for CBE programs on December 18, 2014 (IFAP, 2014). The letter clarified that direct assessment was one form of CBE and that credit hour-based programs were another approach. The document addressed the concerns raised in the September 2014 audit regarding who provided regular and substantive interaction with students—in order for an individual to be considered a faculty member, that person had to be qualified in the subject matter being learned by students, based on the standards set by the accreditor. University staff, who did not meet the accreditor's standards for instructing

students in a specific subject, would not be considered faculty for the purposes of complying with the requirement for regular and substantive interaction between instructors and students (IFAP, 2014).

The letter also stated institutions must identify how to calculate satisfactory academic progress and determine when Title IV federal funds have to be returned in self-paced programs, if students stopped completing their work (IFAP, 2014). The communication reiterated federal student aid could not be used for assessments of prior learning that occurred outside of the educational programs provided by the postsecondary institution. It also stated a substantive change review with accreditors was required the first time an institution offered any type of CBE program. Previously, substantive change reviews were mandated only for direct assessment CBE. The document noted accreditors have a number of additional roles when evaluating direct assessment programs, but those roles were not detailed (IFAP, 2014). This new CBE guidance was issued just before the December holidays. When Loudon personnel returned in January, they were focused on preparing for the reaccreditation site visit that was scheduled to begin in late March. The University was unaware of the new requirement to undergo a substantive change review with the accreditor for all first-time CBE initiatives.

University regional accreditation.

Having spent two years preparing for the reaccreditation process, the site visit by the accrediting team was completed without a problem on April 1, 2015. There were no recommendations for improvement that resulted from the process. Although the reaccreditation applied only to the traditional degree programs, the self-study report mentioned the competency-based work that was underway. By doing so, the University

had hoped to get some input regarding CBE from the team conducting the site visit (Interviewee 25, personal interview, April 4, 2016). However, the accreditation team provided no guidance. Once the reaccreditation work was completed, Loudon began again to refocus on the CBE initiative. The next section discusses the events leading up to the internal CBE pilot and the approval of new policies incorporating aspects of competency-learning into the traditional degree programs at Loudon.

Phase 3—CBE Pilot and New Policies

Before receiving the official letter of reaccreditation for the traditional academic programs, Loudon University submitted a request for accreditation for the new CBE degree on June 4, 2015. However, two days earlier on June 2, C-RAC had issued new accreditation guidelines regarding CBE programs (Council of Regional Accrediting Commissions, 2015). The C-RAC announcement specified CBE programs could be defined as credit hour-based, direct assessment, or a hybrid of the two. This was the first time a hybrid CBE program was mentioned as an official option. Previously, the U.S. Department of Education had specified if direct assessment CBE was used, the entire program must be direct assessment (IFAP, 2013a). The announcement reiterated the requirement from the U.S. Department of Education's December 18, 2014 "Dear Colleague" letter that a substantive change had to approved by an accrediting authority the first time a postsecondary institution offered any type of CBE program. Loudon was unaware of this requirement when it applied for CBE accreditation just two days after the C-RAC announcement. Then, on June 9, 2015, in a letter to the accreditors, the U.S. Department of Education acknowledged the CBE delivery model was still evolving and

reinforced the importance of the accreditors' roles in evaluating CBE experimental programs (Bounds, 2015).

Independent of the CBE timing, the regional accreditor officially informed Loudon that its traditional degree programs had been reaccredited on June 25, 2015 for another decade (G. A. Pruitt, personal communication, June 26, 2015). Within two months after that positive affirmation, however, the accrediting authority told Loudon in an e-mail message that it would not review the new CBE degree for accreditation, stating a substantive change review was mandatory for the first two CBE programs offered by an institution (E. Fogarty, personal communication, August 18, 2015). This notification was received less than two weeks before Loudon had planned to begin an internal CBE pilot. Loudon interpreted the response from the accreditor to mean two competency-based programs were required before the institution could request a substantive change review. This was in direct contrast to the accreditor's invitation in August 2013 to participate in its CBE pilot; that letter stated only one program could be part of the accrediting authority's pilot (E. H. Sibolski, personal communication, August 2, 2013).

CBE internal pilot.

The development of the CBE modules in the Blackboard learning management system, which began in January 2015, continued through the summer of 2015 in anticipation of beginning an internal CBE pilot when the fall academic term commenced on August 31. One student, who was an HR director, had been selected for the pilot of the HR Management CBE degree. He had many years of experience in HR, but was told by his employer he needed a college degree to be considered for promotion to vice president of HR. He seemed like the ideal candidate to work through the academic

content and the redesigned assessments in the new HR learning modules in the CBE program—he was intelligent, mature, motivated, and experienced.

Since the new degree had not been approved by the regional accreditor, Loudon decided to offer the new HR modules as directed studies. This format seemed to be a good fit for administering the new competency-based content on the small scale associated with the internal pilot, and it was one of the modalities that the University had used for some time with accreditor approval. Directed studies generally had one or two students and were usually used when a required course that students needed was not scheduled in a particular term, resulting in a potential delay in the students' graduation date. The instructor assigned to a directed study received one-tenth the normal course compensation for each student in the directed study. The students worked independently, but interacted one-on-one with their instructor as needed regarding assignments. The directed-study format worked well for the CBE pilot and showed the new HR learning modules could be administered as a series of individual courses. This became an important factor when Dr. Kingston, the academic chair for the HR Management program, decided to offer the CBE learning modules as one-credit courses in the traditional HR degree.

The student selected for the CBE pilot worked with an academic advisor in COEL to learn how credit for some general education courses could be awarded through external exams. While the CBE work was underway in the College of Business, COEL had been working on new policies to expand the number of ways students could earn credit in traditional degree programs. However, college credit for passing standardized tests had been a long-time policy at Loudon that predated any CBE work. The COEL

advisor noted the student was able to pass six exams in one day, which was highly unusual (Interviewee 7, personal interview, February 29, 2016).

After flying through several general education exams, the student in the CBE pilot began the comprehensive HR pretest, anticipating he would do so well that he could skip much of the content in the HR degree. However, he had no international HR experience or expertise, and that was required to master the SHRM competencies in the CBE program. Dr. Kingston, who was assigned as the instructor for the HR modules, reported the student scored in the D grade range on the pretest because of his lack of international expertise (Interviewee 11, personal interview, March 2, 2016).

Although the student was knowledgeable in many aspects of HR and could skip some of the learning modules based on his test results, the CBE program required completing every project-based assessment based on HR scenarios to demonstrate all of the SHRM competencies. Dr. Kingston decided assessments of prior learning could not be used in the pilot to earn credit for the HR modules (Interviewee 11, personal interview, March 2, 2016). A good score on the pretest was not enough to prove competence. It merely informed the student and the instructor about which areas needed strengthening and which ones did not. The student, however, wanted his employer to certify that he was already competent in the areas where he did well on the pretest, rather than completing time-consuming assignments to prove his expertise (Interviewee 11, personal interview, March 2, 2016).

By about the mid-point of the fall semester, the student dropped the CBE program and enrolled in the standard HR Management courses at Loudon. The assistant dean in the College of Business postulated that completing the CBE project assignments on an

accelerated pace was too much work, given the pilot student's job responsibilities as an HR director (Interviewee 8, personal interview, February 29, 2016). No new students have subsequently expressed interest in the competency-based program. However, while the CBE pilot was underway, two events with significant regulatory implications occurred at the U.S. Department of Education.

Conflicts at the U.S Department of Education.

In September 2015, shortly after Loudon began the competency-based HR Management pilot, two different CBE communications from the U.S. Department of Education made headlines within an eight-day period. First, the Department published the long-awaited guidelines for the CBE experimental sites (U.S. Department of Education, 2015b). Back in December 2013, the Department had solicited suggestions for experimental sites, which would use innovative practices such as CBE (IFAP, 2013b). Seven months had passed before the Department had published, at the end of July 2014, the process for applying to become an experimental site (U.S. Department of Education, 2014). More than a year after that, the guidelines for the experimental sites were finally issued on September 22, 2015 (U.S. Department of Education, 2015b). This long-anticipated guidance seemed to be a big step forward for CBE. Then, on September 30, the Office of Inspector General for the U.S. Department of Education published a damning audit report, accusing the regional accreditor for the Midwest of lax oversight regarding accrediting CBE programs (Whitman, 2015). The Inspector General recommended those institutions, which had been accredited for CBE programs without undergoing a substantive change review, immediately stop distributing federal student aid. This audit report involved a lot more institutions than the negative audit concluded a

year earlier that only pertained to the handful of accredited direct assessment CBE programs (Howard, 2014). Since Loudon had not yet initiated the substantial change review process required for regional accreditation, it took a wait-and-see approach after the audit results were published. Unlike what happened following the first CBE audit in 2014, new CBE guidance from the U.S. Department of Education was not issued in December following the 2015 audit.

Reaccreditation for the College of Business.

Subsequent to the reaccreditation process for the entire University, the College of Business underwent the process for its professional reaccreditation with the International Assembly for Collegiate Business Education (IACBE). Both the traditional and competency-based HR Management degree programs at Loudon were part of the College of Business. In its June 2015 self-study report for the IACBE, required for reaccreditation, the College described the CBE program as one of its initiatives to enhance academic excellence. Only one sentence in the 86-page report mentioned the competency-based initiative, since as Dean Ingram explained, the professional accrediting authority had no specific criteria for CBE (Interviewee 9, personal interview, February 29, 2016). After submitting the self-study report, the College of Business received its professional reaccreditation in December 2015. However, shortly before the notification of reaccreditation, the focus at Loudon changed from new programs, like CBE, to new enrollment in existing programs.

Changing priorities at Loudon University.

Although the president of the University only attended Faculty Senate occasionally, he was at the November 2015 meeting to report enrollment in two- and

four-year colleges was decreasing nationally, due in part to the difficulty students had in paying tuition. This was troubling news for an institution that received 95 percent of its revenue from tuition and had enjoyed increasing enrollment in the recent past (*Our Story Unfolds*, 2015). The president announced an enrollment management task force had been formed to address the softness in the fall enrollment. This was around the same time the student in the CBE pilot decided to switch into the traditional HR Management program. No additional students had expressed interest in the CBE degree when they met with their advisors to enroll and choose a program. The University had not advertised the CBE degree because its marketing budget was generally used to promote the institution, not specific programs.

Dr. Townsend in Administrative Affairs noted CBE was probably too new to have an immediate impact on enrollment without an extensive marketing campaign to explain it to prospective students (Interviewee 20, personal interview, March 21, 2016). Dr. Quigley in Academic Affairs agreed CBE would not be the short-term solution for enrollment:

> [O]nce I got back from the CAEL conference, they pretty well emphasized that this would not attract a lot of students. Set expectations low for this. I assumed it would be something that people would flock to. They were saying, probably not. They're tools that will help some people. It was really an investment in the University's future, if you will, a piece of our future. (Interviewee 17, personal interview, March 14, 2016)

A self-paced, competency-based approach to earning a degree did not seem to be part of the solution to soft enrollment in the near term. Furthermore, the existing HR Management degree was one of the smaller programs in the College of Business (Interviewee 18, personal interview, March 16, 2016). Even if there was a sizable

increase in HR Management students, it would not have made a significant dent in the enrollment problem.

Expanding alternate forms of credit.

In parallel with the CBE efforts, COEL had been working on revised academic policies to expand the opportunities to earn credit through alternative means, such as external certifications and experiential learning. In addition, the revised policies specified credit could be earned in the traditional degree programs by completing the self-paced, third-party general education courses that had been selected for the new CBE degree. Drafts of the new policies had been submitted for review to the Academic Council in October 2014, and again in September 2015. At the Faculty Senate meeting in January 2016, Dr. Quigley asked the Senate members to review and comment on the new policies. At the February Senate meeting, he requested a vote on the new academic policies. The policies were approved with no objections and no abstentions. This meant new options to earn credits for competency-based learning would be incorporated into traditional degree programs at Loudon. Although no students were enrolled in the CBE program, competency-based learning was permeating the traditional academic programs because of the new policies. Students had new, convenient ways to earn credit toward a degree, much as the CBE program had been intended to provide. To some extent, this made the reason for having a separate CBE degree less compelling.

New one-credit HR courses.

After the Faculty Senate meeting in February 2016, the curriculum committee met the same day to review changes to specific degree programs. At the curriculum meeting, several new 15-credit certificates that bundled together three-credit courses were

approved. These micro-credentials were intended to entice new students to take courses and earn college credit, even if students did not want to pursue an entire degree. However, it was hoped some students would complete a certificate and, then, continue on to earn a degree. This was related to the initiative to increase enrollment that President West discussed at the November 2015 Faculty Senate meeting.

At the same curriculum committee meeting, Dr. Kingston, who had overseen the CBE pilot, received approval for new one-credit HR courses based on the learning modules that had been created for the CBE program. The new one-credit HR courses would be somewhat self-paced because each had one major assignment, rather than small, weekly ones. Furthermore, students could pace their studies based on the number of credits they wanted to tackle in a term. In addition, if these one-credit courses were popular with students, the courses could be bundled together into new certificates or micro-credentials in the future. The new courses would be offered as part of the traditional HR Management degree. This provided new, flexible options for students to earn credits, in addition to the academic policy changes described earlier.

CBE no longer an institutional priority.

Each May, the Administrative Cabinet at Loudon finalizes the institutional priorities for the upcoming fiscal year that runs from July 1 to June 30. CBE first became an institutional priority in 2013, and it remained one for three years. However, in May 2016, CBE was removed from the priority list for the upcoming fiscal year. Although the CBE development was completed in time for the fall 2015 academic year, the internal pilot of the program was terminated when the student in the pilot dropped the CBE program and switched into the traditional HR Management course of study. Loudon

never initiated the substantive change review process to get the new CBE degree accredited, because no other students expressed interest in the self-paced program. The institutional priorities report at the end of fiscal year 2015-2016 noted competencies had been identified and Blackboard modules developed, but a pilot student found the CBE program difficult. The report indicated the CBE initiative would continue to be reviewed and revised. Although there may be ongoing work to modify the CBE program, most of the academic work was completed and there were no plans to expand the competency-based initiative to other academic programs because of lack of interest from students. Therefore, CBE was removed from the list of institutional priorities.

Summary of Case Study Timeline

In summary, the development of the CBE degree at Loudon University was affected by external events involving the regulations from the U.S. Department of Education for federal student aid and the regional accrediting requirements. Internally at Loudon, the creation of a CBE degree that would satisfy the regional accreditor and qualify for federal student aid was intertwined with the decennial reaccreditation process for traditional degrees and the formation of COEL. Under the new policies promoted by COEL, students could accumulate college credit for experiential learning assignments and external certifications that demonstrated workplace competencies. In addition, COEL implemented a new process whereby federal student aid could be used for a three-credit portfolio course that included up to three more credits based on the assessment of the student's prior learning portfolio. All of these internal changes, including the CBE initiative, were intended to provide more ways for post-traditional students with work or military experience to earn college credit. The next section

describes the findings regarding the CBE design decisions and how those decisions were impacted by the events in the timeline.

Findings

By examining how Loudon University's mission influenced the CBE design decisions, the effect of evolving regulatory requirements, and the impact of internal economics and policies, this research identified eleven decisions that had a major impact on the way the CBE initiative was designed and later piloted. The mission provided the context for the strategic decisions for the CBE design. The regulatory environment involved the requirements for federal student aid and regional accreditation that the CBE program had to satisfy. Internal policies and economics drove many of the decisions associated with designing the academic content and administering the self-paced CBE degree. Although the CBE program was put on hold pending more student interest, many of the CBE design decisions enabled new options for students beyond the competency-based degree.

The findings, shown in Table 1, are grouped in categories associated with: (a) Loudon's mission, (b) the higher education regulatory environment, and (c) internal policies and economics. Although there were probably hundreds of decisions, large and small, made during the three-year timeframe of this case study, only those decisions for which alternatives might have led to a significantly different direction for the CBE initiative are shown in Table 1. For instance, if the CBE degree had been intended to lower higher education costs, the design probably would have focused on reducing the effort by the faculty to assess competencies. Instead, Loudon designed a CBE degree to be a new, convenient option for students, requiring faculty involvement similar to the

traditional programs. A decision to offer a very low cost degree also might have precluded the need to qualify for federal student aid. However, Loudon decided to keep its existing tuition model and to seek federal student aid rather than to partner with businesses offering tuition reimbursement. These examples highlight how some of the decisions in Table 1 could have changed the direction of the CBE work. More details are in the next subsections.

Table 1

Summary of Key Decisions Related to the Research Focus Areas

Key CBE Decision	Focus Area
Designed CBE as a self-paced option to offer convenience for students	Mission
Decided self-paced CBE program had to qualify for federal student aid	Mission
Selected HR degree to use SHRM competency model rather than identifying new competencies	Mission / Economics
Chose credit hour-based not direct assessment (or hybrid) CBE	Regulatory
Required demonstration of HR competencies rather than allow PLAs	Regulatory
Implemented completion degree versus full bachelor's degree	Reg. / Econ.
Employed third-party general education courses instead of in-house courses	Economics
Disaggregated existing HR courses rather than designing CBE from scratch	Economics
Used one-credit learning modules, not variable or fractional credit units	Economics
Sought to leverage existing systems instead of new ones for self-pacing	Economics
Planned to charge by the credit hour, not all-you-can-learn subscription	Policy

Mission

Loudon's mission to provide open access to a cost-effective, career-oriented higher education for adults of all ages is the guiding beacon for the institution. Loudon's decision to pursue self-paced CBE to provide a convenient way for working adults to

earn an undergraduate degree reflects the importance of the mission in the decision-making process. The omnipresence of Loudon's mission also shaped the decision to qualify for federal student aid for the CBE degree as well as the decision to develop a competency-based program based on existing, widely recognized professional competencies. Each of these examples illustrates the ways in which Loudon's mission influenced the institution's perception of competency-based higher education and how it should be realized. Dr. Vail, the assistant vice president and dean of Administrative Services, explained her perspective on the connection between CBE and Loudon's mission in this way:

> It comes back to this type of learning fits our mission. It fits who we are. I mean it's a practitioner-based institution, so for students to be able to show their abilities and demonstrate their abilities made sense for who we are as an institution. It seems like the next logical step in where we will go with learning. It always came back to the mission and who we are. (Interviewee 22, personal interview, March 24, 2016)

CBE seemed to be good fit for the University's mission of offering career-oriented degrees because a focus on workplace competencies is one of the attributes of competency-based higher education. The next three subsections detail the role of Loudon's mission in the CBE design.

Mission—CBE as a self-paced option for students.

Loudon's mission contributed to the University's decision to pursue self-paced CBE because the University wanted to provide a convenient option for working students to earn a career-focused degree. In this way, the alignment between Loudon's mission and CBE set it apart from other institutions that have chosen CBE to provide a lower-cost higher education and / or to meet demand by employers for specific competencies (Weise, 2014). When Loudon's President West was asked how the decision was made to

explore CBE in the first place, he stated the institution had long been focused on career competencies as part of its mission (Interviewee 23, personal interview, March 24, 2016). Although Dr. Quigley, the vice president of Academic Affairs, was the driving force behind the CBE initiative, the president said he had suggested some ideas to Dr. Quigley along the lines of CBE. President West went on to explain that the self-paced aspect of CBE offered students a convenient option to get a higher education—convenience for working adults was an important way Loudon had actualized its mission to provide open access to a higher education. Open access at Loudon meant more than admitting students who otherwise might not be able to get a higher education; it also meant providing ways for students who were working adults to fit education into their busy lives.

Offering flexible ways to earn college credit is consistent with Loudon's mission to serve adults of all ages, especially working adults with demanding schedules. For instance, when Dr. Payne, the assistant vice president of Academic Affairs, was asked why Loudon was pursuing CBE, she focused on flexibility: "I can tell you why we're doing this. [Loudon] University has always tried to have as many alternatives as possible for students to gain credit" (Interviewee 16, personal interview, March 14, 2016). Undergraduates at Loudon would have the flexibility to pick either a competency-based or traditional degree in HR Management. Dr. Mann, previously the senior director for online learning and educational technology and now the new dean of COEL, described the flexibility of a CBE option, but she also emphasized the University's mission to provide an affordable education: "I think the success [for CBE] would come in being able to come up with a marketable solution that fits the mission of our university, which is that—affordability, flexibility" (Interviewee 13, personal interview, March 7, 2016).

Since the current tuition at Loudon was relatively low, the CBE degree was intended to be a convenient option that would be as affordable as the traditional degrees and would give students the flexibility to choose between competency-based and traditional academic programs.

Interestingly, when President West discussed the convenience of CBE being consistent with the University's mission of providing educational options for working students, he focused specifically on the self-paced aspect of CBE (Interviewee 23, personal interview, March 24, 2016). Although competency-based programs did not have to be self-paced (Grant et al., 1979), CBE often involved personalized pacing (Competency-Based Education Network, 2016). When Dr. Quigley introduced the concept of CBE to the Faculty Senate in early 2013, he equated CBE with being self-paced. He noted new approaches, such as self-paced programs, could remove barriers to degree completion encountered by some students. Likewise, at the following Senate meeting, CBE was discussed as a way students could demonstrate competencies at their own pace. The self-paced characteristic of CBE provided students with a convenient way to earn a degree, which aligned with Loudon's mission.

Although CBE has been positioned by other universities as a low-cost alternative to higher education (Kelchen, 2015; Slaton, 2013), CBE was adopted at Loudon as a convenient way to fulfill its mission to provide open access to higher education for all types of students at an affordable price. The chief financial officer at Loudon indicated the current tuition for traditional programs would probably apply to the CBE degree because—consistent with the mission of offering an affordable education—tuition was already relatively low (Interviewee 24, personal interview, March 25, 2016). The

emphasis of the self-paced program was on convenience for students, rather than a lower price tag. The CBE program was not intended to fill an unmet need regarding workplace competencies for HR professionals—the existing traditional HR Management degree and the new CBE degree were both based on the same SHRM competency model. CBE at Loudon was not aimed at replacing traditional degrees—it was intended to provide students, especially working adults, with a new self-paced alternative to make it more convenient to earn college credits. Enabling working students flexible ways to get a higher education has been how Loudon has actualized its mission.

Mission—Self-paced CBE program had to qualify for federal student aid.

Loudon's mission to provide open access to higher education ensured that decisions made about CBE degree requirements would prioritize federal student aid eligibility. Dr. Townsend, the senior vice president in Academic Support Services, stated: "I think it [CBE] directly supports our mission with giving people an opportunity" (Interviewee 20, personal interview, March 21, 2016). When Dr. Townsend mentioned providing people opportunities, she was referring to the open access aspect of Loudon's mission, which enabled individuals to attend college who might not meet the admissions standards elsewhere. However, just opening the doors was not enough, if people could not afford to attend the University. Loudon was committed to ensuring students had access to the financial resources to achieve their educational goals (Interviewee 24, personal interview, March 25, 2016). As early as the March 2013 Faculty Senate meeting, federal student aid was presented as a requisite for any CBE program at Loudon.

Individuals who might not meet the enrollment standards at other institutions are admitted to Loudon because it is open access. Many of the students at Loudon are from

lower-income brackets—over 60 percent of the students currently receive some form of federal student aid (Interviewee 24, personal interview, March 25, 2016). Nearly a third of undergraduates receive federal grants, and some of these students also have federal student loans; in total, 46 percent of students have loans from the federal government (*Our Story Unfolds*, 2015). It was assumed the CBE program would attract students with financial needs similar to the current student body. Loudon did not pursue other funding alternatives, such as partnering with employers who would provide tuition reimbursement. The College of Business, which developed the CBE degree in HR Management, did not have employer partnerships in place, and establishing those relationships would have taken a lot of time and energy. Although providing financial aid for students who otherwise could not afford to attend college is important to Loudon, the University has yet to satisfy all of the requirements to receive federal student aid for the CBE program (Interviewee 6, personal interview, February 26, 2016).

Mission—HR degree to use SHRM competency model.

In addition to providing open access to a flexible, convenient, and affordable higher education, as part of its mission, Loudon offers only career-focused degrees that prepare students for specific professions. In this way, Loudon's mission shaped the decision to implement a CBE program with existing, well-established competencies developed by SHRM. Dean Ingram in the College of Business explained the HR program was chosen because, consistent with Loudon's mission to prepare students for careers, SHRM had defined widely accepted competencies for the HR profession (Interviewee 9, personal interview, February 29, 2016). The academic content for the new CBE degree was designed around enabling students to master the SHRM

competencies. A competency-based degree in nursing was considered because nursing essentials that were similar to competencies had been defined by the AACN. However, the AACN had not updated the nursing essentials since 2008 (American Association of Colleges of Nursing, 2008), and Loudon did not want to base a new degree on requirements that might be out of date. Furthermore, the University wanted to use competencies that were already established for specific disciplines, rather than attempting to define its own.

With the exception of accounting, few of the other the degrees offered by Loudon had well-established sets of competencies developed by professional associations. Dr. Ingram noted accounting was considered for the first CBE degree (Interviewee 9, personal interview, February 29, 2016). However, the competencies defined by the American Institute of CPAs were not generally learned on the job because typically a degree was required before entering the accounting field. Loudon had wanted students to begin the CBE program with work experience relevant to the degree they sought, and some of the HR competencies defined by SHRM could be acquired in the workplace by individuals without an undergraduate degree. Furthermore, SHRM had authorized Loudon to provide preparatory courses for its HR certification exam because the University was fully compliant with the SHRM competencies. Therefore, the HR Management major was chosen for the first CBE degree because of the SHRM competency model and the possibility students entering the CBE program would have some HR expertise. By using existing HR competencies, Loudon did not have to engage employers to define competencies, as had been the case for other institutions developing CBE programs (Chyung et al., 2006; Clerkin & Simon, 2014; Nodine & Johnstone, 2015;

Pearce & Offerman, 2010). However, without input from employers, their interest in hiring graduates with a CBE degree was unknown.

Although the University's mission to offer only career-oriented degrees was the primary reason for selecting the HR Management program, there were additional considerations that factored into that decision. Rather than developing a CBE program in a new discipline, Loudon intended to start with an existing degree that was available completely online and to redesign it in a competency-based mode. This seemed to be an easier starting point than developing an entirely new degree. The existing HR Management degree was already based on the SHRM requirements, and all of the required HR courses had been developed in an online format. Furthermore, Loudon would not be breaking new ground with a competency-based degree in HR because that was one of the CBE degrees offered elsewhere (WGU, 2016a). Moreover, since the CBE degree would be academically equivalent to Loudon's HR Management degree program that was already accredited, accreditation of the CBE degree might be smoother than if it was in a new field of study that was not part of Loudon's current accreditation. Although the decision to use externally defined competencies was driven by Loudon's mission to offer career-oriented degree programs that were convenient and affordable, some of Loudon's key decisions in the CBE initiative had regulatory implications, as described in the next subsection.

The Regulatory Environment

The Inspector General for the U.S. Department of Education had criticized the accreditation process for CBE in two consecutive audits (Howard, 2014; Whitman, 2015), resulting in evolving regulatory guidance from the Department of Education and

varying interpretations of that guidance by the regional accreditor. This state of flux impacted Loudon's CBE design decisions. A critical decision with regulatory implications was Loudon's choice of the credit hour-based form of CBE, rather than the direct assessment option. Direct assessment CBE programs faced additional regulatory hurdles (IFAP, 2014). Another Loudon decision with regulatory implications was requiring the student in the CBE pilot to demonstrate HR competencies, instead of getting credit for prior learning. PLAs were not allowed in direct assessment CBE, and although Loudon chose the credit-based approach, the University was unsure if PLAs would be permitted by the regional accreditor. A third key decision involved whether to develop a full bachelor's degree or a 45-credit completion degree in the competency-based format. Originally, the regional accreditor specified a CBE bachelor's degree had to be at least 120 credits based on their interpretation of the Department of Education's 2013 requirement that an entire program had to be either credit-based or direct assessment (IFAP, 2013a). Subsequently, the accreditor determined CBE completion degrees would be acceptable, as long as the entire 45-credit completion degree was competency-based. Loudon decided to design a completion degree after it had started to implement a full CBE bachelor's degree. The next three subsections discuss in more detail the decisions impacted by the regulatory environment.

Regulatory environment—Credit hour-based CBE.

Although the decision to retain credit hours rather than use the direct assessment form of CBE was made for a number of different reasons, it had significant regulatory implications, and in turn, was influenced in part by the regulatory environment. The March 2013 guidance from the U.S. Department of Education equated CBE and direct

assessment (IFAP, 2013a). The Department later acknowledged in December 2014 there were two forms of CBE: credit hour-based, as well as direct assessment (IFAP, 2014). C-RAC announced in June 2015 that hybrid CBE approaches were allowed (Council of Regional Accrediting Commissions, 2015), but that was not an option when Loudon began its CBE program design in 2013. Retaining credit hours was the safe choice from a regulatory perspective because the U.S. Department of Education required additional scrutiny by accreditors if a direct assessment program was to qualify for federal student aid (IFAP, 2014). Therefore, the regulatory hurdles were not as onerous for a credit-based approach as they were for direct assessment programs.

There were additional reasons for designing a credit-based CBE degree. As noted earlier, Dr. Quigley stated retaining credit hours provided the framework for the other CBE design decisions (Interviewee 17, personal interview, March 14, 2016). Credit hours were familiar to both students and employers, and federal student aid was based on credit hours (Interviewee 9, personal interview, February 29, 2016). If students transferred to another college, applied to graduate school, or sought tuition reimbursement from employers, generally documentation of grades and credits was required. If a direct assessment approach was used, institutions still had to translate the direct assessment competencies into credit or clock hours when applying for federal student aid (IFAP, 2013a). Furthermore, the internal systems at Loudon supported a credit-hour approach. The March 2013 Faculty Senate presentation stated any new CBE program had to work within the existing systems infrastructure.

Regulatory environment—Demonstration of HR competencies.

The regulatory environment also influenced the decision to require a demonstration of HR competencies in the CBE pilot rather than awarding credit for the student's prior learning experiences. As noted in the timeline section, the U.S. Department of Education and the regional accreditors have reiterated several times that PLAs could not be used in direct assessment CBE programs (Council of Regional Accrediting Commissions, 2015; IFAP, 2013a; IFAP, 2014). Although CAEL stated PLAs were allowed in programs that retained credit hours (CAEL, 2015), the June 2015 guidance from C-RAC did not clarify that PLAs were permissible in credit-based CBE (Council of Regional Accrediting Commissions, 2015). Since the internal CBE pilot began before the review by the regional accreditor, Loudon had not received definitive guidance from the accrediting authority regarding PLAs.

Even though Loudon chose to use a credit-based approach for CBE, it decided to follow the more rigorous regulatory requirements established for CBE direct assessment programs, which did not allow PLAs. When creating the CBE degree, Loudon was particularly concerned about academic rigor and quality. The regional accreditor had emphasized academic quality in the letter inviting Loudon to participate in its CBE pilot. However, the regulatory environment was only one factor in the decision to exclude PLAs. President West noted new types of degrees would only be accepted externally by employers if the degrees were of high academic quality (Interviewee 23, personal interview, March 24, 2016). When the CBE degree was included in the institutional priorities for fiscal 2013-2014, it was listed as an initiative associated with academic quality. Likewise, in the reaccreditation report submitted by the College of Business to

its professional accreditor, the CBE program was described as one of the pursuits focused on academic quality. The academic chair for the business management courses in the new HR Management CBE degree stated: "I was concerned with the quality and the rigor. I wanted to make sure that there was enough in there, meaning we want more evidence than less. More is better" (Interviewee 5, personal interview, February 25, 2016). Because the University did not want there to be any question about the quality and academic rigor of the self-paced CBE program, Dr. Kingston required the student in the pilot to demonstrate the HR competencies in the degree, rather than allowing the student to get credit for his prior HR knowledge (Interviewee 11, personal interview, March 2, 2016).

In addition to the concern that awarding credit for prior learning without completing the CBE assessments might compromise the academic rigor, using PLAs would have circumvented the pilot's purpose. The intent of the pilot was to have a student go through the entire online program to identify areas that needed to be modified. Giving the student credit for prior learning, without completing the newly developed assessments, would have precluded what Loudon had hoped to learn from the pilot. However, it was time consuming for the student to do the project-based HR assessments. Although the student could skip the learning modules for the content he already knew, he was still required to complete the assignments to demonstrate his subject area expertise. Dr. Kingston believed the effort required for the CBE assessments may have been the reason the individual dropped out of the pilot (Interviewee 11, personal interview, March 2, 2016).

Regulatory environment—Completion degree versus full bachelor's degree.

The regulatory environment impacted the type of undergraduate degree that Loudon decided to design—a completion degree versus a full bachelor's degree. Originally, the regional accreditor specified if an undergraduate CBE degree was to be accredited, it had to be an entire associate's or bachelor's degree. The existing HR Management program included both a 120-credit bachelor's degree and 45-credit completion degree, whereby students transferred in up to 75 credits and finished the final 45 credits in their bachelor's degree at Loudon. Since the University did not offer associate's degrees in HR Management, Loudon started to develop an entire bachelor's degree for HR in a competency-based mode, per the accreditor's initial requirements. After that work had begun, the accrediting authority indicated a 45-credit completion degree would be acceptable. Given that new option, Loudon changed its original direction and decided to develop a CBE completion degree.

The choice of a completion degree was made because that meant only 45 credits of course content had to be developed in a competency-based mode. In addition, the new competency-based completion degree for HR Management could be modeled after the existing HR completion degree. Furthermore, the decision to offer a CBE completion degree was similar to proven approaches used elsewhere, where most undergraduates have an associate's degree before enrolling in competency-based bachelor's programs (WGU, 2016g). There were also concerns expressed by Dean Ingram in the College of Business about how many students would want to complete 120 credits in a self-paced mode (Interviewee 9, personal interview, February 29, 2016). Loudon also chose a

completion degree partially due to internal economics—a 45-credit degree would be less costly to develop. More of the economic decisions are discussed in the next subsection.

Internal Economics and Policies

There were five significant decisions about the design of CBE at Loudon that were influenced primarily by internal economics and policies. First, the choice to use third-party courses for the general education requirement rather than developing those courses in house was motivated by internal economics. Another decision related to economics was to disaggregate existing courses in the HR Management program to create the CBE learning modules, instead of developing the CBE content from scratch. Loudon also decided that all the CBE learning modules would be fixed, one-credit units, not variable or fractional credit units. In addition, the University chose to leverage its existing systems as opposed to implementing new systems for the self-paced CBE program. A fifth decision to charge by the credit hour involved economics, but that decision was driven more by internal policies. In contrast to the traditional tuition model based on credit hours chosen by Loudon, other institutions with CBE programs typically offered all-you-can-learn subscription periods (Kelchen, 2015). The following subsections describe the decisions related to internal economics and policies in more detail.

Internal economics—Third-party general education courses.

Before the regional accreditor indicated a completion degree would be permitted, Loudon had started to develop a full bachelor's degree. However, to save the cost and effort of identifying general education competencies and then developing the online learning modules associated with those competencies, the University decided to use

third-party courses to fulfill the general education requirement in the CBE undergraduate degree. Although SHRM had specified the competencies related to the HR discipline, there were no well-established competencies for the general education component of most bachelor's degrees. The Lumina Foundation had developed the Degree Qualifications Profile, which had five areas of learning (Adelman et al., 2014), and the Association of American Colleges and Universities had identified four essential outcomes for liberal arts education in the Liberal Education and America's Promise campaign (AAC&U, 2008). However, both of these initiatives were still relatively new and not widely accepted yet. Without a well-established competency model that Loudon could use, the University was reluctant to invest in developing general education learning modules for its CBE degree.

The College of Arts and Sciences, which provided the general education courses required in the undergraduate degree programs offered by the other colleges at Loudon University, decided to evaluate the courseware from a third party that had been approved by the American Council on Education (2016). This third party had been used in Capella University's CBE program (Capella, 2016b). Loudon found the online, self-paced courses to be high quality (Interviewee 21, personal interview, March 23, 2016). By contracting for the general education courses, Loudon was able to avoid the economic burden of identifying general education competencies and developing new self-paced courses for the CBE degree.

Once the University decided to contract for third-party courses, Loudon changed its internal policies to specify those courses could be used in any of the undergraduate degrees—both competency-based and traditional degree programs. The University did

that to provide consistency across the institution. Loudon did not set up an outsourcing arrangement with the third party for the general education courses; the University just agreed to transfer in the credit earned from taking the courses. By treating these courses as transfer credits from another institution, Loudon avoided going through the regional accreditor's substantive change review process that is required when traditional degree programs outsource courses to an external entity (Interviewee 25, personal interview, April 4, 2016). For students, these online, self-paced courses were less expensive than classes taken at Loudon. However, students would have to work with the third party to determine if federal student aid could be used to cover the course cost, since financial aid from Loudon would not apply to courses from another institution.

Internal economics—Disaggregate existing HR courses to create modules.

Internal economics also drove the decision to reuse content from existing courses in its traditional HR degree program because that approach would avoid the cost of developing a CBE degree from scratch. The existing 45-credit completion degree for HR Management included 15 credits for business courses, 27 credits for HR, and one three-credit math course. Once Loudon learned a completion degree could be accredited, the University modeled the new CBE program after its current HR Management completion degree. This meant only five three-credit business courses and nine three-credit HR courses had to be redeveloped in a competency-based mode. The required math course in the completion degree was one of the general education courses provided by the third party discussed in the previous subsection. Because the existing HR degree was based on the SHRM competencies that were to be used in the CBE degree, and all the courses in the degree already used an online template, Loudon decided

to disaggregate the existing HR and business course templates into smaller, self-paced learning units. The reduced number of courses that had to be developed for an online completion degree and the reuse of existing course content was more economical than developing a CBE bachelor's degree from the ground up.

Although starting with the existing courses enabled Loudon to reuse many of the online learning materials, the University found it had to design new competency-based assessments (Interviewee 1, personal interview, February 22, 2016). This was an unexpected expense, but it was not a substantial cost and was covered under the online course development budget. All of the new CBE learning modules were designed to include a pre- and post-test. The pretest allowed the students to know if they had the knowledge to start the assessments in the learning modules without going through all the educational content first. The posttest was a summative assessment of the subject matter. In addition, project-based assessments based on true-to-life HR and business scenarios were created for each learning module. When the CBE curriculum was designed, Loudon decided to develop library reading lists, or LibGuides, instead of requiring students to purchase textbooks for each learning module (Interviewee 1, personal interview, February 22, 2016). These design decisions would later facilitate offering one-credit courses in the traditional HR Management program.

Internal economics—One-credit learning modules.

To control ongoing costs by simplifying the administration of the program, Loudon decided all the CBE learning modules would be worth one credit, rather than allowing the units to be fractional or variable credits. CBE programs are characterized by learning modules that are smaller than three-credit courses to enable students to move

through the curriculum at their own pace. In addition to controlling administrative costs, Loudon knew its current systems could support one-credit courses (Interviewee 17, personal interview, March 14, 2016). Given that decision, the five business courses and the nine HR courses in the existing completion degree for HR Management were redesigned as one-credit units.

Although Loudon decided to contract with a third party for the general education courses for the first CBE degree, from an economic perspective the College of Arts and Sciences wanted the option in the future to provide its own in-house general education learning modules. Self-paced, third-party courses allowed Loudon to get started with CBE in the short term, but that decision might result in lost revenue over the long term since students would pay the third party, not Loudon, for the courses. Disassembling existing courses into smaller modules would enable an element of self-pacing for Loudon courses. Therefore, the College began rewriting the learning goals for all of the general education courses so they could be disaggregated into one-credit modules at some point (Interviewee 18, personal interview, March 16, 2016). Each three-credit course was defined to have three learning goals; four-credit courses were designated to have four goals. The rewrite of the learning objectives would make it easier in the future to break up the courses into one-credit units. By offering self-paced courses in house at some later point in time, Loudon would not lose revenue to the third party selected for the CBE initiative.

Internal economics—Leverage existing systems.

In addition to reusing the content of existing courses in the CBE learning modules as a way to save development costs, Loudon wanted the new self-paced program to use

the existing systems to avoid the cost of new software. There was no budget in the CBE program for new systems. Although CBE has been described as a disruptive force in higher education (Weise, 2014), self-paced, competency-based learning was presented at the March 2013 Faculty Senate meeting as a new modality, rather than a major change in the way the University operated. Given that perspective, using the existing systems was one of the requirements specified in that Senate presentation. There was no discussion whether leveraging the existing systems infrastructure was the best way to implement CBE—it was just assumed the existing systems would be used. To a large extent that was an economic decision, however the decision was also based in part on the Loudon governance structure.

To control costs across the institution, Loudon tries to ensure university-wide consistency for its administrative systems. To provide that uniformity, a unique aspect of the Loudon governance structure is the University Coordinating Council. This Council includes the academic deans and the administrative directors, plus the senior leaders (*Our Story Unfolds*, 2015). The Council focuses on ensuring administrative policies and procedures are implemented uniformly across the seven colleges and the 14 sites. This provides flexibility for students because the same courses and administrative services are offered at multiple sites, meaning working students can complete some of their studies at a campus close to home and take other courses at a site near their workplace. This emphasis on consistency means individual programs cannot choose their own processes and systems. Therefore, although the CBE degree was designed to be self-paced, Loudon intended it to be administered with the same systems used by the traditional academic programs.

Although Loudon did not want to make the economic investment in new software for the CBE program, trying to use the existing systems, which were designed for fixed-schedule classes, proved to be difficult in a self-paced program. Even though a demonstration of the Blackboard learning management system at the April 2013 Faculty Senate meeting showed it could be used for a self-paced program, rework was required when the CBE program was built into Blackboard. Originally, all of the CBE modules were designed to be in a single Blackboard course, with the intent of making it easy for students to progress from one learning module to the next (Interviewee 4, personal interview, February 24, 2016). Using the Blackboard adaptive release feature, students had to pass the posttest in one learning module before starting the next unit (Interviewee 9, personal interview, February 29, 2016). This seemed to be a good way to track the students' progress. However, Blackboard was designed for courses, not individual learning modules. This one Blackboard course was the equivalent of about 40 credits. That meant the grade center in Blackboard for one course contained about 100 assessments—pre- and post-tests, plus one or more project-based assessments for each one-credit unit. Instead of fulfilling the initial intent of making it easy for students to progress in a self-paced mode, keeping track of that many assessments in one Blackboard course was unwieldly (Interviewee 7, personal interview, February 29, 2016).

Although Loudon had hoped to save development costs by reusing existing course content, it decided to rework the one, large Blackboard course and divided it into six separate ones. This improved tracking by the student and the instructor (Interviewee 7, personal interview, February 29, 2016). Even so, it was still difficult to track progress because students could complete the learning modules in almost any order in the

redesigned courses. Without a natural sequence, like an organization by weeks in a traditional course, it was easy for students to lose track of what was completed. For that reason, other universities have supplemented their Blackboard system with a student dashboard to make it easier for students to see which competencies have been mastered and what work is yet to be done (Capella, 2014; Kamenetz, 2013). However, Loudon did not plan to invest in any new systems as part of its CBE effort because there was no budget to do so.

Although the Blackboard learning management system was tested early in the design process and a CBE demonstration using Blackboard was given at the April 2013 Faculty Senate meeting, the student information and financial aid systems were never tested to see if they could be used for a self-paced program. Loudon discovered those systems were designed for fixed-schedule academic terms, and they could not be made to work for a self-paced program with flexible start and end dates (Interviewee 12, personal interview, March 4, 2016). Furthermore, Loudon was planning to replace its aging student information system in 2017. Because of that, it would be difficult to justify the cost of modifying the current system. The self-paced CBE program could still be run on a small scale, but much of the administration of the program would have to be done manually (Interviewee 12, personal interview, March 4, 2016). Loudon was willing to implement manual solutions on a limited basis (Interviewee 12, personal interview, March 4, 2016), if the alternative meant a significant inconvenience for students. However, a manual solution would not be economical for a large number of students. Although the desire was to control costs by leveraging the existing systems, that decision

might result in higher costs for manually administering the CBE program until an automated solution could be implemented.

Internal policies—Charge by the credit hour.

Finally, Loudon's decision to charge students by the credit hour for the CBE degree was guided by internal policies associated with the existing tuition model. Although charging by the credit hour had economic implications, the main reason for retaining the current credit-hour tuition was this approach was consistent with internal policies, and it was supported by the existing systems. The tuition charged for the directed study modality, used for the CBE pilot, was based on the same rate per credit hour that applied for standard courses. If the CBE program goes forward, Loudon plans to continue to charge students by the credit hour (Interviewee 24, personal interview, March 25, 2016), even though all-you-can-learn subscription periods are popular for self-paced programs (Kelchen, 2015). As noted earlier, tuition at Loudon was relatively low, and the self-paced CBE program was intended to provide a convenient option for students, not a lower cost alternative to the traditional programs. Therefore, the same tuition policy was planned for the CBE program.

The decision to charge by the credit hour could have several implications for students. Pay-as-you-go systems based on a charge per credit, such as the one at Loudon, could be more economical for students who attended college part time (Kelchen, 2015). Most of the undergraduates at Loudon fell into that category (*Our Story Unfolds*, 2015). All-you-can-learn subscriptions could save money if students completed their studies at an accelerated pace. However, post-traditional students who were working and raising families might not able to expedite their studies. The decision by Loudon to charge by

the credit hour provided students the flexibility of determining how many credits they wanted to take each term, which enabled part-time students to pace their studies.

In summary, each of the eleven key decisions detailed above involved choices between significantly different alternatives that affected the direction taken for the CBE design. Three of the decisions were driven by Loudon's mission, three more were related to the regulatory environment, and five were influenced by internal economics and policies. The conceptual map for this research provided a framework for those decisions. The external entities influencing CBE decisions, regulators and employers, were shown on the horizontal axis of the conceptual map. This research focused on the influence of regulators, since Loudon assumed the use of the SHRM competencies would satisfy the requirements of employers. The vertical axis in the conceptual map indicated the design of a CBE degree should be driven by an institution's operating model and based on the foundation provided by the principles of CBE. The decisions made by Loudon related to its mission, as well as internal economics and policies, fell under the operating model in the conceptual map. The next subsection provides more details.

Conceptual Map

The conceptual map that guided this research is intended to be a framework that institutions, in addition to Loudon, can use for the design of their CBE programs. The conceptual map has four components: (a) the university's operating model, (b) the regulatory environment, (c) the principles of CBE, and (d) the standard requirements for professions. The operating model component includes an institution's mission, academic policies, operating processes, infrastructure, and staffing and financial models. The regulatory environment component in the framework encompasses the requirements from

the U.S. Department of Education and regional accreditors. The third component in the framework, the principles of CBE, is intended to be the foundational underpinning for the design of a competency-based degree. The principles of CBE first gained prominence in the 1970s as a way to improve the quality of teacher education and have since been applied to preparing students for other professions. One way to assess the quality of CBE degrees is based on how well graduates meet the standard requirements for professions, which is the fourth component in the conceptual map. The competency models developed by professional associations and external certification / licensure processes, which are the elements in the standard requirements for professions component of the conceptual map, can be built into CBE programs to ensure students are prepared for future careers.

Although this research did not specifically probe how well the principles of the CBE were met, the interviews and the review of the online learning modules for the new HR Management degree program revealed that the principles of CBE had been taken into account in the design of the course content and assessments. Loudon wanted its first CBE degree to meet high academic quality standards that included true-to-life competency-based assessments, consistent with CBE principles. As noted earlier, President West believed new types of degrees had to be particularly rigorous academically to be accepted externally by employers (Interviewee 23, personal interview, March 24, 2016). Furthermore, the regional accreditor required institutions seeking accreditation for a CBE degree to provide evidence of academic quality.

The requirements for professions was an important factor in the design, even though Loudon did not work directly with employers when creating the CBE degree. For

instance, the well-established competency model developed by SHRM was a main reason for selecting HR Management to be the first CBE program. In addition, Loudon created competency-based assessments based on scenarios HR professionals might encounter on the job. There was also a lot of discussion concerning whether an external certification that was a summative assessment of the entire HR program would be required for graduation. When the CBE work began, the recognized certification for HR professionals was from the HR Certification Institute (HRCI), which was based on the SHRM competencies. However, in May 2014, SHRM ended its relationship with the HRCI and started to offer its own certifications (Gurchiek, 2014). This presented a dilemma as to whether the new SHRM certification or the one from the HRCI should be used as a summative assessment for the program overall. It was difficult to predict if one certification would become the de facto standard for HR. Although incorporating external certifications as a degree requirement might be a way to demonstrate the rigor of an academic program, Loudon decided to allow students to earn a degree without passing any certification exam (Interviewee 11, personal interview, March 2, 2016). The University did not want to make passing a specific external exam mandatory for graduation since certification was not a requirement to become an HR professional. Employers valued certifications in HR (Lester et al., 2010), but still hired individuals who were not certified.

An element missing from the requirements for professions component in the conceptual map is the demand from employers and students for competencies in certain disciplines. When universities are deciding which CBE degree to design, the unmet needs of employers for competent professionals and the interest from students in certain

growing career areas should be taken into account. Loudon assumed there would be demand for a CBE degree in HR Management. Although the University would have liked to pilot the CBE program with a few students, only one was identified. That individual transferred from the competency-based program into the traditional HR Management program, and no additional students have expressed interest in the new degree. Furthermore, the desire by employers for a CBE degree in HR Management was unknown. Loudon could have designed a new degree in a discipline where there was demand from employers and interest from students for certain competencies, instead of assuming students would want a CBE option within one of its existing academic programs. The conceptual map should be upgraded to take into account the demand for a CBE degree with certain competencies in a particular discipline.

The CBE degree has been put on hold due to the lack of demand from students and employers. Nonetheless, aspects of a competency-based approach have begun to be incorporated into the traditional degree programs at Loudon. The results and interpretation section that follows describes how the decisions made in the CBE initiative affected the design of the program and Loudon's goal to provide new ways for post-traditional students to earn an undergraduate degree.

Results and Interpretations

The goal of the CBE program was to provide a self-paced option that would be a convenient way for students to earn credit toward a degree. Some of the decisions made in the CBE design resulted in new, convenient options for students in traditional degree programs. In that sense, the goals of the initiative were met. For instance, students in all academic programs can fulfill their general education requirements by taking the online,

self-paced courses from a third party selected for the CBE initiative. The HR learning modules created for the CBE degree are now being offered as one-credit courses in the traditional HR Management program. On the other hand, some decisions were barriers to actually operationalizing the CBE program. For example, although Loudon decided to leverage the existing systems infrastructure, the student information and financial aid systems could not support a self-paced program. Table 2 summarizes the eleven key decisions from the findings and whether particular decisions were enablers of new options or barriers to implementing the CBE degree.

Table 2

Summary of Key Decisions that were Barriers or Enablers

Key CBE Decision	Result
Designed CBE as a self-paced option for students	Enabler of new options
Decided CBE program had to qualify for federal aid	Barrier to self-paced program
Selected HR degree to use SHRM competency model	Barrier to knowing demand
Chose credit hour-based CBE	Enabler of new options
Required demonstration of HR competencies	Barrier in CBE pilot
Implemented completion degree	Enabler of new options
Employed third-party general education courses	Enabler of new options
Disaggregated existing HR courses	Enabler of new options
Used one-credit learning modules	Enabler of new options
Sought to leverage existing systems	Barrier to self-paced program
Planned to charge by credit hour	Enabler of new options

Based on the table above, first the barriers encountered in the CBE design are examined, followed by a discussion on how the CBE initiative enabled new options for students.

Barriers to the CBE Implementation

The CBE degree was not included in the catalog of programs for fall 2016 due to roadblocks within the regulatory environment, implementation difficulties associated with internal systems, and the lack of demand from students and employers. As indicated in Table 2, four of the key decisions from the findings contributed to those barriers. The next subsections describe how certain decisions impaired implementing the CBE degree.

Regulatory roadblocks.

The decision that the CBE degree had to qualify for federal student aid meant the academic program first had to be accredited. That would require Loudon to initiate a substantive change review with its regional accreditor. The form for requesting a substantive review for CBE programs has five pages of questions that must be addressed. First, institutions have to show evidence of sufficient demand for the CBE degree. Then, colleges must provide three-year enrollment and financial projections. In addition, the substantive review involves questions about how the CBE program will be administered and how academic quality will be assured. Loudon has a lot of work to do to be ready to go through the substantive change review process required for CBE before the institution can apply for federal student aid.

In this case example, qualifying for federal student aid is a barrier for designing and implementing self-paced CBE programs. Federal student aid is intended to offset the cost of instruction. It cannot be used for assessments of prior learning or for external assessments, such as certification exams, that are separate from the instruction provided by a postsecondary institution (IFAP, 2013a). Once an institution qualifies for federal student aid, the actual amount awarded to students is based on the number of credits they

take in an academic term. However, the aid is predicated on the students demonstrating satisfactory academic progress, as defined by the postsecondary institution. Institutions need to determine if self-paced students are continuing in their studies within an academic term, otherwise federal aid may need to be returned. In traditional degree programs, student progress can be tracked through attendance records and the submission of weekly graded assignments. In online, self-paced programs, progress is more difficult to determine because students may be pausing and restarting their studies.

Another key requirement for federal student aid is ensuring regular and substantive interaction between students and instructors in self-paced programs. This was a critical issue raised in the 2014 and 2015 audits of the CBE programs (Howard, 2014; Whitman, 2015). It is insufficient for self-paced students to initiate all the contacts with faculty members (Whitman, 2015). Since self-paced programs do not typically include scheduled classes, instructors must reach out to students on a regular basis. Having an academic advisor or mentor, who is not a faculty member, maintain contact with the student does not meet the federal requirements for regular and substantive interaction between students and instructors (Howard, 2014).

Loudon University has yet to satisfy all of the changes needed to ensure federal requirements are met when academic programs are offered in a self-paced mode outside of fixed academic terms. There is a multitude of complicated regulations that can be difficult to decipher. Furthermore, implementing a self-paced program within the constraints of federal student aid is like fitting a square peg in a round hole. Significant barriers arise when self-paced, student-directed learning has to be fit into a regulatory framework designed for fixed-schedule, instructor-led classes. However, without

additional students expressing interest in the CBE program, tackling those issues has not been a priority at Loudon.

Leveraging existing systems.

Loudon encountered problems when the piloting the CBE program because of the decision to use the existing information systems infrastructure. The student information system, which is used for enrollment and billing, and the financial aid system at Loudon were designed for classes offered at fixed times in pre-specified academic terms. The systems were not intended for self-paced academic programs. The software for these systems was not developed at Loudon, and any changes would probably have to be made by the company providing the software. Furthermore, Loudon had decided to replace its aging student information system, but that was not scheduled to happen before 2017. Given the current systems were not designed for administering self-paced programs, Loudon would have to wait for the new student information system or develop manual procedures for administering self-paced CBE, if the program were to go forward. In addition, Loudon would need to investigate if the current financial aid system could be modified, supplemented with additional software, or replaced to support the non-term academic years that were generally used for financial aid in self-paced programs. However, Loudon had no budget for new systems for the CBE initiative.

A recent survey of colleges implementing CBE found data systems were the number one implementation barrier (Public Agenda, 2015). Similarly, Nodine and Johnstone (2015) reported many institutions had difficulties with their enrollment systems related to self-paced CBE programs. Northern Arizona University had to delay the start of its CBE program due to limitations with its enrollment system (Hurst, 2013).

Loudon was aware existing information systems could be a problem for self-paced CBE, which is why a demonstration of how Blackboard could be used for self-paced courses was given to the Faculty Senate in April 2013. Since the CBE initiative was driven by Dr. Quigley in Academic Affairs, he understood the importance of the Blackboard learning management system. However, the student information and financial aid systems were run by a separate unit at Loudon, Administrative Affairs. That may have been why those systems were not tested until later. Of course, if students were interested in the CBE degree, the University could manually enroll them. To date, however, there has been a lack of demand from students for the CBE program.

Lack of demand from students for self-paced CBE degree.

The decision to demonstrate competencies by completing the CBE assessments, rather than awarding PLA credit for the student's HR expertise, may have been the reason the pilot student transferred out midway through the first semester. However, Kelchen (2015) found students who did not complete CBE programs generally dropped out in the first term because self-paced programs were not the right fit for everyone. Although CAEL stated PLAs were allowed in credit-based CBE programs (CAEL, 2015), the guidance from C-RAC was not clear about that (Council of Regional Accrediting Commissions, 2015). In addition, even if PLAs were allowed in some credit-based CBE programs, they might not be permitted in completion degrees that were only 45 credits. Also, Loudon wanted to ensure the CBE degree was academically rigorous. A demonstration of competencies, as required in direct assessment CBE programs, was a more rigorous way to ensure the student had developed the desired expertise rather than just awarding credit for prior learning. Dr. Kingston remarked that the student in the pilot

did not seem to grasp the concept of CBE (Interviewee 11, personal interview, March 2, 2016). In the future, it will be important for students to understand the expectations before beginning a CBE program.

The fact that self-paced CBE may not be the right choice for all students presents a conundrum regarding Loudon's mission. On the one hand, self-paced programs afford students new, flexible options, which is consistent with the mission of providing career-oriented higher education for adults of all ages, especially post-traditional students. On the other hand, an important part of Loudon's mission is open access, meaning virtually no one with a high school diploma or GED certificate is turned away. However, the self-paced CBE option may not be a good fit for those students who have no relevant work experience because they would have to spend significant time learning the subject matter before they could attempt the assessments. Dr. Quigley asserted: "If someone comes in with no credit, no life experience credit, no PLA, and tried to do this [CBE] program, I didn't envision—it wasn't designed for them" (Interviewee 17, personal interview, March 14, 2016). Although, in principle, competency-based programs focus on the exit, not the entrance criteria (Elam, 1971), Loudon needs to decide if relevant work experience will be required before enrolling in the CBE program. The University also needs to determine if the accreditor will allow, and if it wants to award, credit for prior learning associated with the competencies in the completion degree. Unless PLAs are allowed in the competency-based program, as they are in traditional degrees, students may not choose CBE.

Lack of demand from employers for graduates with CBE degree in HR.

The decision to use the SHRM competency model saved the cost and time of identifying new workplace competencies, but it precluded the need to engage employers to define the competencies they wanted. Nodine and Johnstone (2015) noted many institutions developing CBE programs worked with employers to identify desired competencies. Engaging businesses in the CBE decisions can help to establish buy-in from them for a self-paced degree. In addition, the choice of CBE degrees to offer can be driven by employer demand (Clerkin & Simon, 2014). Furthermore, the first students to enroll in CBE programs offered by some other universities have been the employees in the businesses with whom the universities partnered to identify the workplace competencies for the CBE degrees (College for America, 2016b; Fain, 2013). Loudon did not establish a pipeline for attracting new students from the business community. The University assumed a self-paced approach would attract post-traditional students.

Because Loudon did not identify demand from either employers or prospective students for a CBE program, to date only the one student in the CBE pilot has expressed interest in the new degree. Normally, before Loudon offers a new academic program, the college proposing the program is required to analyze the competition from other universities and the external market demand for employment associated with the new degree. That was not done since the CBE degree was positioned as a new alternative for an existing college major, not a new academic area. Although the choice of a CBE degree in HR Management based on the widely accepted SHRM competencies was consistent with the mission of offering career-oriented programs, external interest in a self-paced, online CBE degree for HR professionals was unknown. The academic chair

for the Finance program in the College of Business expressed concerns when asked about success for the CBE program: "When all is said and done, you measure success by is there a demand for your product? Are there sufficient customers to take advantage of that demand?" (Interviewee 19, personal interview, March 17, 2016). Loudon already had a traditional HR Management degree that was based on SHRM competencies, if employers needed individuals with HR expertise. It was unclear if there was demand for a competency-based version of the same degree. Although there were roadblocks to the CBE implementation, aspects of the design work are enabling new options for students, as described in the next section.

Enablers of New, Convenient Options for Students

The reason Loudon decided to develop a self-paced CBE program was to provide students a convenient alternative to traditional degree programs. In May 2013, the Loudon Faculty Senate affirmed: "…we currently practice competency-based learning assessment in numerous ways such as the prior learning process. We fully embrace the acceleration and expansion of these practices in order to better serve our students and to facilitate their learning" (*Faculty Senate*, 2013, p. 5). With that affirmation, the University began to design and develop a CBE degree. However, it should be noted, the carefully worded resolution specified competency-based learning assessment, not necessarily a new CBE program. Unlike some who consider CBE a disruptive force in higher education (Weise, 2014), Loudon viewed it as part of a continuation of current practices.

The CBE development work resulted in new, convenient options for students. The intent of the competency-based initiative was to give undergraduates the flexibility

of completing their degrees in HR Management by taking the final 45 credits in either a traditional way or in a self-paced mode. Although the competency-based degree is on hold, Loudon has started to offer the HR modules developed for the CBE program as one-credit courses in the traditional HR Management degree. The new courses were possible because Loudon had decided to design a credit hour-based CBE program and to disaggregate the existing HR courses into smaller, learning units. In doing so, they created one-credit modules, rather than learning units that had fractional or variable credits. In addition, since a new tuition model was not selected for the CBE program, no changes had to be made in how students were to be charged for these one-credit courses. Because Loudon was originally required by the accreditor to design a full bachelor's degree, the University decided to contract for self-paced, online general education courses from a third party. These courses are now an option for undergraduates in traditional degree programs to satisfy their general education requirements. Additionally, during the timeframe of the CBE design work, COEL developed new policies that provided ways students could earn credit for experiential learning and the competencies they had developed in the workplace. The next subsections interpret the implications of these results.

One-credit courses.

As a result of developing the one-credit HR modules for the CBE degree, the College of Business is now offering in its traditional HR Management degree one-credit courses based on those CBE learning modules. These one-credit courses have only one large, project-based assignment and a final exam, instead of weekly assignments and quizzes; so, students can complete the coursework at their own pace. However, all the

work has to be completed in seven weeks. Since only one credit of work is involved, this allows more time than the typical three-credit course at Loudon that has to be completed in a seven-week block or 15-week semester. Thus, an element of self-pacing has been introduced into each course. Multiple one-credit courses can be taken in the same academic term, along with the standard three-credit courses, for students who want to complete their degrees faster. Although the one-credit modules were designed for the CBE program, students in the traditional HR Management major now have a new flexible way to earn college credit.

There are several advantages to offering one-credit courses. One-credit courses allow a certain amount of self-pacing within an academic term because students can decide exactly how many credits they want to tackle. In addition, the new HR one-credit courses were designed to allow some self-pacing within the courses, because there was a single project with a written and oral presentation component and a final exam, rather than weekly quizzes and assignments. To satisfy the federal student aid requirement, there would be weekly online interactions between instructors and students either to explain course material or to check on the students' progress in the new, small courses. Because the CBE learning units were designed to use library reading lists, instead of textbooks, students in the one-credit courses could save the cost associated with a textbook. One-credit courses also enable students to avoid the expense of a three-credit class, if they only need one or two credits to satisfy their degree requirements. Although the CBE program was not designed to be a low-cost alternative to traditional degree programs, students could see some small cost savings because of the CBE work.

In addition to providing flexibility for students, one-credit courses require no special accreditation. Moreover, the current internal systems and policies at Loudon accommodate these courses. Because Loudon has one-month, five-week, seven-week, and 15-week academic terms, these one-credit courses could be offered in a variety of different timeframes to give students even more options. One-credit courses may also enable students to earn more PLA credit. With three-credit courses, students must demonstrate knowledge of all topics in the course to earn any credit. If a student only knows two of the three major topics in a course, no PLA credit is given under the policies at Loudon. Partial course credit is not allowed at Loudon for PLAs. However, if that three-credit course was disaggregated into one-credit units, the students might be able to earn one or two PLA credits, based on their prior experiences.

Disaggregating three-credit courses into one-credit units may facilitate the transfer of credits to another institution. This is important for post-traditional students because they frequently attend multiple colleges (Soares, 2013). At one institution, a two-course sequence might include topics A, B, and C in the first three-credit course and topics D, E, and F for the second three-credit course. At the receiving institution, a similar two-course sequence might include topics A, B, and D (instead of topic C) in course one and the rest of the topics in course two. If a student tried to transfer the credits for the first course in the sequence (topics A, B, C), that course would not cover all the subjects expected by the receiving institution (topics A, B, D), and the student would typically lose three credits in the transfer, even if the originating college was highly regarded academically and the receiving institution was open to accepting transfer credits. If a student had taken topics A through D as four one-credit units, the student

might be able to transfer three credits, losing only one credit for topic C at the receiving college. If both institutions had one-credit courses, the student might be able to transfer all credits.

Online, low-cost, self-paced option for general education courses.

Another outcome of the CBE program at Loudon was the option for students to earn credit associated with the general education requirement in their traditional degree program by taking online, self-paced courses from a third party. Loudon is treating these courses as transfer credits, so the students would pay the third-party provider, but Loudon will accept all credits the students want to transfer. No credits from the third party would be lost in the transfer. Although these courses are priced lower than those at Loudon, students would only be able to use federal student aid if the third party qualifies for that. Nonetheless, the convenience of self-paced, online courses might be popular. Students with an associate's degree, however, typically have already satisfied their general education requirements, and this third-party option for general education courses would not be applicable to them. It is unknown how many students will take advantage of this alternative way to earn credits. There may be an adverse effect regarding the number of students who take general education courses at Loudon or at community colleges, if this new alternative is very popular. On the other hand, additional students might choose to enroll in Loudon because it offers this online, self-paced option. In any case, demand for these third-party courses could provide insights into demand for online, self-paced courses in general.

New credit policies for experiential learning and workplace competencies.

The new options described in the previous two subsections were a direct result of the CBE design work at Loudon. While the CBE work was underway, COEL was drafting new ways for students to earn credit for external certifications of their workplace competencies and for experiential learning through internships and cooperative education assignments. In addition, COEL implemented a new approach that enabled students to take a three-credit course where they learned how to create a portfolio of their past experiences. The course included a free assessment of their competency-based prior learning portfolio that could be worth three more credits. Students could get six credits for the price of a three-credit course and federal student aid could be used for the portfolio course. Although the CBE degree has not progressed past the pilot stage, students have many new, convenient ways to earn course credit, which was the primary reason Loudon decided to pursue a self-paced CBE program.

Summary

This research found eleven decisions related to the University's mission, the regulatory environment, and internal economics and policies had a significant impact on the design of the competency-based degree. First, consistent with its mission, Loudon decided to create a self-paced CBE program as a convenient way for post-traditional students to earn a degree. Second, the University decided the CBE degree had to qualify for federal student aid because most Loudon students needed help financing their education. Third, Loudon selected HR Management for the initial CBE degree because SHRM had developed widely accepted competencies. In addition to the mission-related decisions, three key decisions had regulatory implications. Loudon decided to use

credit-based CBE, which involved fewer regulatory hurdles than the direct assessment approach. However, in the CBE pilot, the University chose the more rigorous direct assessment requirements, which excluded PLAs, because the degree had not yet been accredited. When the accreditor specified a completion degree would be acceptable, Loudon stopped designing a full bachelor's degree and focused on a CBE completion degree. Beyond the regulatory requirements, five additional decisions were driven by internal economics and policies. To save development costs, Loudon decided to use third-party general education courses and to reuse content from existing HR and business courses. To simplify administering the program and thereby control costs, Loudon decided all learning modules would be one credit, rather than fractional or variable credits. The University also wanted to use the existing systems to avoid new software costs. Finally, Loudon decided to apply the existing tuition policy to the CBE program because tuition was relatively low already.

Each of the key decisions had significant implications for the design of the CBE degree. The case study provided a rich, detailed description of the choices made, and the results and interpretations of those decisions, so other institutions might apply the learnings. Specifically, several decisions presented barriers: the requirement for federal student aid, the exclusion of PLAs, and the desire to use existing systems. Ironically, the choice of SHRM competencies to ensure students would be prepared for HR careers, precluded the need to work with employers to define competencies. This may have contributed to the lack of interest in the CBE degree. On the other hand, many design decisions made in the CBE program facilitated new convenient options for students in traditional degree programs. For example, all Loudon undergraduates can satisfy their

general education requirements by taking the online, self-paced courses provided by the third party selected for the CBE program. In addition, Loudon transformed the self-paced HR learning modules in the CBE program into one-credit courses in the traditional HR Management degree. In parallel with the CBE efforts, COEL introduced new experiential learning and credentialing policies, based on workplace competencies, which apply to the traditional academic programs. Therefore, as result of the CBE effort and the COEL initiatives, undergraduates at Loudon have more flexible ways to earn college credit. Other universities may consider incorporating some of the choices made by Loudon into their degree programs, especially if they want to attract students who are working adults.

CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

Introduction

Loudon University designed a new competency-based bachelor's degree in HR Management to offer post-traditional students the convenience of an online, self-paced educational program. Although the CBE and traditional HR Management degrees at Loudon were both based on SHRM competencies, the U.S. Department of Education required a self-paced CBE program to be separate from a traditional degree to qualify for federal student aid (IFAP, 2013a; IFAP, 2014). However, Loudon encountered problems with its internal systems, regional accreditation requirements, and lack of demand from students when it piloted the new self-paced program. As a result, the University decided to incorporate the one-credit courses from the competency-based degree into its traditional HR program and to defer offering the CBE degree. Students have the option of taking one-credit courses that have an element of self-pacing rather than an entire self-paced program.

In parallel with the CBE development effort, COEL implemented new options, which were associated with workplace competencies, for Loudon's traditional degree programs. Because of the CBE work and the COEL initiatives, students at Loudon have many new alternatives for earning an undergraduate degree. This case study demonstrates there are multiple ways to provide convenient, flexible options for working adults to earn college credit. CBE holds a lot of promise, but it can be a perilous journey to implement a new degree that is entirely self-paced. There was a lot of initial excitement when CBE was first tried in the United States in the 1970s, but it fell out of favor for the reasons discussed in chapter two. Before making a significant investment in

CBE, other universities should be very clear about what they hope to accomplish. Loudon was able to partially meet its goal of providing new convenient options for post-traditional students without implementing an entire self-paced CBE program. Other universities may find CBE is one way to accomplish their goals, but not the only way.

Conclusions

This research examined the decisions made in the design of the CBE degree from the perspective of the University's mission, the external regulatory environment, and internal policies and economics. Loudon found designing the academics for a competency-based degree was easier than implementing a self-paced program, given the constraints of the regulators and existing systems. The next several subsections discuss the conclusions from the research.

Mission

The mission of Loudon University, to provide open access to career-oriented degrees for adults of all ages at an affordable cost, played a critical role in the decision to design a competency-based program. The self-paced aspect of CBE was intended to provide a new, convenient option for working students to earn an undergraduate degree. Students would have the flexibility to choose either a traditional or competency-based degree in HR Management. Other universities have differentiated their competency-based programs from traditional degrees by offering CBE as a low-cost option (Kamenetz, 2013; Slaton, 2013) or by focusing on competencies that are in high demand (Clerkin & Simon, 2014). The CBE program at Loudon was not intended to be a lower-cost alternative—tuition for the competency-based degree was planned to be the same rate per credit hour as the traditional degrees. The Loudon CBE initiative was not

aimed at satisfying an unmet employer need—the University did not choose a degree in a new, high-demand discipline, but instead chose to redesign an existing academic program that was already based on widely accepted workplace competencies. The lack of differentiation for the CBE degree at Loudon may have contributed to the lack of interest by students. However, the Education Advisory Board asserts it is a myth that students and employers are demanding CBE (EAB, 2015).

An important element of the mission for Loudon University is offering only career-oriented degrees. Consistent with that, the HR Management program was chosen for the first CBE degree because SHRM had defined competencies that were used broadly in the HR profession. By employing the SHRM competency model, Loudon could ensure graduates had the necessary capabilities for a career in HR. However, this approach circumvented the need to work with employers to define competencies, and it was unclear if there was demand from businesses for a CBE degree in HR Management. Loudon assumed this type of degree would be popular with students and employers. In a recent study of nearly 500 companies, however, few hiring managers indicated they were familiar with CBE (Franklin & Lytle, 2015). If Loudon had partnered with businesses in the design of the CBE degree, the University might have been able to gauge the interest of employers. Loudon's mission to offer career-oriented degrees presumes there is employer demand for those degree programs so graduates are able to find gainful employment. Loudon does not know if there is demand for a competency-based degree in HR Management.

As part of its mission to provide open access to higher education, Loudon wants to be sure students have the means to finance their education. Because the University is

an open enrollment institution, Loudon attracts students who might not be accepted elsewhere. Many of these individuals are economically disadvantaged. Although some companies provide tuition reimbursement for the programs at Loudon, the majority of students receive federal student aid. The University assumed the new degree would draw the same type of students as were currently enrolled, so Loudon decided that federal student aid was a requisite for the CBE degree. Other universities have worked with employers who might provide tuition reimbursement for employees who pursue a CBE degree (Blumenstyk, 2016; College for America, 2016b; Fain, 2013). There were no existing partnerships between Loudon and employers seeking graduates with HR expertise. Loudon assumed the companies that already reimbursed employees for tuition would do so for the new CBE degree, since it was based on the same SHRM competencies as the existing HR program. Loudon did not believe it was necessary to work with employers to gain their acceptance of the new self-paced option. Furthermore, it would have taken a lot of time and effort to establish new relationships with businesses that did not already reimburse tuition. Therefore, Loudon did not pursue special arrangements with employers whereby tuition reimbursement could be used as an alternative to federal student aid.

A surprising result of the case was the lack of interest from students for a self-paced, CBE degree. Consistent with the mission of offering open access to career-oriented degrees for adults of all ages, the senior leadership at Loudon assumed working students would want the convenience of a self-paced approach. Loudon did not have a marketing plan for the competency-based program because the institution envisioned individuals would be eager to enroll. President West, for instance, thought a

self-paced program would be ideal for working students (Interviewee 23, personal interview, March 24, 2016), but the University did not have data to confirm that. Just three weeks before the CBE pilot at Loudon was scheduled to begin, the Education Advisory Board published a study that indicated neither students nor employers understood CBE (EAB, 2015). Loudon became aware of this research after the pilot was underway (Dean of the College of Business at Loudon University, personal communication, November 5, 2015). Consistent with the findings of the Education Advisory Board, Loudon discovered students seemed more comfortable with the traditional HR Management program. The notion of completing coursework at an individual pace, without the support of classmates, did not seem to appeal to post-traditional students who may have been nervous about their academic abilities having been out of school for several years. Given the lack of interest from students, the CBE degree was put on hold. Dr. Townsend in Administrative Affairs thought an extensive marketing campaign would be needed to explain CBE to prospective students (Interviewee 20, personal interview, March 21, 2016), but there was no money budgeted for that.

Other institutions should validate the demand for CBE before beginning such a program. Furthermore, colleges might consider the approach taken by Southern New Hampshire and Brandman University; those institutions have partnered with businesses to enroll their employees in the CBE programs (Blumenstyk, 2016; Brandman University, 2016b). Without interest from students in the CBE program, Loudon has yet to address the regulatory hurdles with accreditation and federal student aid for the new degree.

Regulatory Environment

The case study highlighted the importance of the regulatory environment, which shaped CBE decisions at Loudon in many ways. The CBE discussions at Loudon were initiated shortly before the U.S. Department of Education issued its first guidance on competency-based programs in March 2013 (IFAP, 2013a). To qualify for federal student aid, the Department specified CBE programs had to be entirely separate from traditional academic programs—self-paced CBE could not be mixed and matched with traditional clock- or credit-hour approaches. Therefore, Loudon began to design a new, self-paced CBE degree that would be similar to an existing degree, but administered as a completely separate program.

A key decision, influenced by the regulatory environment, was the choice to retain credit hours in the CBE degree, rather than adopting a direct assessment approach. Credit hours were generally required for transfers to other universities, for admissions to graduate schools, and on transcripts required by employers. In addition, direct assessment CBE programs that eliminated credit hours faced more scrutiny from accreditors (IFAP, 2014). However, the decision to retain credit hours did not mean navigating the regulatory environment was easy.

Originally, the regional accreditor required a full CBE bachelor's degree, not a completion degree. This meant Loudon had to find a way to offer general education courses in an online, self-paced mode. In addition, the regional accreditor specified only one degree program could be part of its CBE pilot (E. H. Sibolski, personal communication, August 2, 2013). Therefore, Loudon concentrated on a single degree. When Loudon applied for accreditation of that CBE degree, the accrediting authority

specified the first two competency-based programs had to undergo a substantive change review (E. Fogarty, personal communication, August 18, 2015). The Loudon leadership interpreted this to mean two degrees were required before they could initiate the substantive change process. However, they subsequently learned the regional accreditor would allow two sequential reviews—one substantive change review for the first CBE degree and a subsequent review for the second degree (Interviewee 25, personal interview, April 4, 2016). Before this was clarified by the accreditor, the internal CBE pilot at Loudon ended when the student switched out of the competency-based HR Management program into the traditional HR degree.

The decision to require the student in the internal CBE pilot to demonstrate current HR competencies, rather than being given credit for prior HR experience, was driven in part by the regulatory environment. In direct assessment CBE programs, PLAs were not allowed (IFAP, 2013a). Although Loudon's CBE program was credit-based, not direct assessment, it was unclear if PLAs would be permitted since the regional accreditor had not reviewed Loudon's competency-based program. Another reason for the decision to preclude PLAs was to ensure high academic standards for the CBE degree by requiring a demonstration of each competency. The student in the pilot had expected to get credit for his HR expertise. When that did not happen, he transferred out of the CBE program.

When Loudon began its competency-based design, a substantive change review was not mandated for accrediting credit-based CBE. Loudon has yet to undergo the change review process that is now required by the regional accreditors for all new CBE programs. However, accreditation is just the first step in the regulatory process associated with being allowed to use federal student aid for CBE programs.

Federal regulations for student aid were not designed for self-paced students in CBE programs. Institutions considering CBE must decide if they will retain standard academic terms or use the borrow-based academic year option, which allows an academic term to be initiated whenever the student begins receiving aid. Irrespective of how academic terms are defined, institutions requesting federal student aid need to have a process for determining when Title IV funds must be returned if self-paced students fail to continue their studies. In addition, colleges must specify how satisfactory academic progress will be tracked in self-paced programs. Academic progress is generally based on the number of credits completed in an academic term that begins and ends on certain dates. In self-paced programs, without fixed start and end dates, defining satisfactory progress may be challenging. Furthermore, to avoid being classified as a correspondence program, institutions seeking federal student aid must ensure there are regular and substantive interactions between students and faculty (Howard, 2014; Whitman, 2015). Regular interaction generally means contact is made by the instructor at least once a week. It is insufficient if all interactions with faculty are student-initiated. Furthermore, the U.S. Department of Education does not allow an academic advisor or coach, instead of a faculty member, to satisfy the requirement for regular and substantive interactions with students (Howard, 2014; Whitman, 2015).

Other universities considering CBE should be aware of the issues associated with self-paced programs. A key learning is to have frequent communications with accreditors and to monitor communications from the U.S. Department of Education since the rules for CBE continue to evolve. Loudon has not yet determined how it will satisfy these

requirements for federal student aid in the new CBE degree, because it found its existing systems would not support a self-paced mode.

Internal Economics and Policies

Internal economics and policies drove several decisions in the design of CBE program. Loudon wanted to leverage the existing systems infrastructure for the new CBE program because the University did not have a budget for new systems to support the self-paced program. In addition, Loudon chose the HR Management degree to be developed in a competency-based mode because SHRM had already defined widely accepted HR competencies. Employing professional competencies was consistent with the mission of offering career-oriented degrees, but using existing competencies also saved the time and cost associated with defining new ones. When the regional accreditor specified a full CBE bachelor's degree was required, Loudon decided to use online, self-paced courses from a third party for the general education requirements in the CBE degree. This saved the cost of developing those courses in house. When the accrediting authority subsequently indicated a completion degree would be acceptable, Loudon chose that approach because it meant only 45 credits had to be developed in a self-paced, competency-based mode. In addition, the University decided to reuse course content from the existing HR degree for the new CBE program. The decisions to develop only 45 credits in a competency-based mode and to leverage existing course content were driven by the internal economics associated with minimizing costs for creating the CBE program. To reduce the effort and cost of administering the competency-based degree, Loudon decided all CBE learning units would be worth one credit, rather than fractional

or variable credits. In addition, Loudon planned to retain the current tuition model for the CBE degree to be consistent with existing policies.

Even if universities do not intend to offer federal student aid for CBE, they may find their existing systems were designed to meet the federal requirements for aid and cannot be easily used for self-paced programs. A survey by Public Agenda (2015) of over 100 institutions indicated data systems were the primary barrier to implementing CBE. Many institutions had existing systems based on fixed academic terms, which did not allow self-paced students to begin and end their studies when they wanted (Nodine & Johnstone, 2015; Public Agenda, 2015). Likewise, Loudon found its systems would not support a self-paced program. Other institutions considering CBE should be aware of the potential issues with existing systems because new ones could be time consuming and expensive to implement.

In addition to evaluating the systems requirements, universities considering CBE should determine the interest in competency-based degrees from prospective students and employers. Loudon was surprised when only one student was identified for its CBE pilot and no other students subsequently enrolled. If prospective students select certain career-oriented degrees because employers are seeking graduates with those credentials, then understanding employer demand is important. To do that, the Workforce Strategy Center at Southern New Hampshire University analyzes the labor market to identify business sectors that are growing or changing significantly (Clerkin & Simon, 2014). It uses that information to decide the degree areas for its CBE programs. Furthermore, Southern New Hampshire and Brandman University have partnered with businesses to enroll their employees in the CBE programs offered by each institution (Blumenstyk,

2016; Brandman University, 2016b). Loudon did not evaluate employer demand for a CBE degree in HR Management and found little interest from students. Franklin and Lytle (2015) reported very few hiring managers were familiar with CBE. The Education Advisory Board warned that many students and employers did not understand CBE, and were not seeking competency-based degrees (EAB, 2015). Therefore, institutions considering CBE should try to partner with employers and gauge interest from prospective students.

The recommendations that follow suggest ways the barriers associated with the regulatory environment, internal systems, and the lack of demand from students and employers can be overcome by incorporating aspects of the CBE initiative into traditional degree programs at Loudon. In addition, the recommendations will discuss how new options for students, enabled by the CBE design work for the HR Management program, can be implemented in more Loudon degrees. Other institutions interested in CBE could take similar approaches as those recommended below.

Recommendations

This research focused on the problem that few colleges offer options that enable working adults to fit education into their busy lives to enhance their career opportunities. Self-paced CBE could be one such option. Finding new ways for individuals in the workforce to earn a college degree is important because nearly a third of undergraduates are post-traditional students, many of whom are already working (National Center for Education Statistics, 2015). Loudon chose to design a CBE degree because the University believed a self-paced program would be a convenient option for working students. Several studies have indicated convenience is an important factor when

post-traditional students choose a college (Broekemier, 2002; Levine & Cureton, 1998; MacAllum, Glover, Queen, & Riggs, 2007; Noel-Levitz, 2012; Peek & Goldstein, 1991). Indeed, much of the growth to date at Loudon University may be attributed to providing convenient, flexible higher education options for students, especially post-traditional ones. The recommendations that emerged from this research will concentrate on how the University can leverage the CBE work to provide new, convenient ways for post-traditional students to earn college credit.

Create Micro-Courses and Micro-Credentials

Although the Loudon curriculum committee approved a proposal in February 2016 for one-credit HR courses, the University should extend its use of one-credit learning units beyond HR. The 15 business modules created for the CBE degree could be offered as one-credit courses along with the HR modules. In addition to new courses, one-credit units could be combined into various new micro-credentials, such as certificates, to attract new students. One-credit courses have several advantages, as described in the results and interpretations section of the last chapter. However, there are additional considerations regarding these small courses that could improve the convenience and flexibility for a broader number of students.

A task force at the Massachusetts Institute of Technology, focused on the future of higher education, recommended online three-credit courses be deconstructed into smaller modules to enable students to choose specific topics of interest (MIT, 2014). Additionally, instructors could bundle these smaller learning units into interdisciplinary courses. The modules could be categorized as either learning units that can be taken in any order or ones that must be taken in a specific sequence (MIT, 2014). Loudon should

classify the one-credit CBE modules using those two categories. This includes not only the 27 credits associated with the HR requirements, but also the 15 business modules that were created for the HR Management CBE degree. Several of the business courses in the HR program are required courses in other degrees in the College of Business and other colleges. By offering these business modules as one-credit courses, students outside of the HR Management program would have a convenient new option. In addition, some of the popular general education courses could be rewritten as one-credit units to provide a new alternative for undergraduates in all the colleges at Loudon. Modules that must be taken sequentially could be bundled into two- or three-credit courses or set up with prerequisites. The other modules could be taken by the students in any order. Both types of modular units could be combined into a variety of new interdisciplinary courses and certificates.

Soares (2013) recommended progressive credentialing, in smaller units than a degree, for post-traditional students. This potentially enables working students to advance their careers as they earn credentials, such as certificates, before they complete their degrees. Earning certificates as part of degrees can also be significant mileposts that encourage students to persist through graduation (Goetz et al., 2011). Loudon offers a form of progressive credentialing in the new Applied Technology degree in the College of Technology. The University also offers many for-credit certificates where the credits earned for a certificate can be applied toward a degree. However, except for the College of Technology, the University does not have many progressive certificates, where one certificate is coupled with another. Loudon could implement more progressive credentials, especially when bundling together the one-credit HR and business courses.

Just creating new certificates may not attract new students, if courses are not scheduled to meet the needs of different types of students. For instance, an unemployed worker seeking new career opportunities might want to complete the 15 credits required for a certificate at Loudon in one semester or less. A working student looking for career advancement might want to take one course per term to earn a certificate as their work schedule permits. Unless the certificate courses are offered every term, the needs of both types of students cannot be satisfied.

Many courses at Loudon are taught only a few times a year due to the number of students who are interested. The one-credit HR courses, originally developed for the CBE program, are intended to be offered in a hybrid format a couple of times during the academic year, as an option for undergraduates in the traditional HR Management degree program. In addition to the planned hybrid format for those one-credit courses, an online modality would provide students with a lot of flexibility, especially if the online courses were available throughout the year. The next subsection discusses how the new one-credit HR and business courses could be economically offered any time.

Enable Flexibility for Students: "Start Anytime" Online Courses

Instead of an entire degree program that is self-paced, Loudon could give students the option of "start anytime" online courses that have an element of self-pacing. These courses could be offered within the current regulatory constraints for federal student aid and the University's current policies and systems. However, "start anytime" courses would differ from current online courses that are only available in scheduled academic terms. Although students in online classes currently can complete their studies anywhere and have access to the course 24 hours a day and seven days a week, the course content is

not available 365 days a year—it is accessible only when the classes are scheduled. This is because online classes are often designed to emulate the classroom courses that meet on a fixed schedule. Online learning frequently involves weekly discussion boards, in lieu of classroom discussions, and requires weekly assignments, just like classroom sections that meet every week. Since most courses at Loudon are taught by adjunct instructors who are typically paid by the course, it is not economical to offer courses every term if the result is classes that are only partially full. Furthermore, courses designed to have student interaction as part of the learning experience must have a minimum number of students to be effective. However, Loudon designed the online CBE modules to be self-paced, without the requirement for weekly interaction between students. Therefore, individual students should be able to start their self-paced studies at any time. Self-paced, online courses do not have to be dependent on the number of students, if they can be offered economically. The following describes how "start anytime" courses, using the one-credit modules created for the CBE degree, could provide a flexible, convenient option for students.

Loudon offers most of its courses in a seven-week block format; there are two blocks per 15-week trimester, with a "reading week" between the blocks. That means there are six seven-week blocks per year. The three-credit block courses are not scaled-down versions of semester-long courses, but are accelerated courses that cover a semester worth of material in seven weeks. The one-credit HR and business learning modules from the CBE program could be offered online in each of the six seven-week blocks in an academic year. Even before registering for a course, the online content could be available for students to preview. Once students register for courses, they would

pay by the number of credits per course, as they do now. Although interaction with the instructor would begin when the scheduled seven-week block starts, students could have access to the online course content as soon as they registered. This would allow self-paced students to start at any time and have extra time to complete their courses. Removing restrictions on when students can start their studies enables more flexibility. For instance, working students who register in December for an online, self-paced course scheduled to begin in January would be able to work on the course content over the December holidays when they might have time off work. They could get assistance from the instructor once the online course officially begins in January.

Each one-credit learning unit, designed for the CBE program, has one major project with a written and oral presentation component, plus a final exam. The students could complete the work at their own pace as long as the work was finished by the end of the scheduled seven-week block. Given that only a single project is involved, this would be easier for instructors to manage than entire self-paced programs where students are individually working on different assignments at various times. Since only one-credit worth of work is entailed, instead of the normal three credits, self-paced students should have plenty of time in a seven-week block to complete their projects.

Under this approach, the concept of an academic term, which is important for federal student aid, would be retained. To comply with Loudon's policies for determining satisfactory academic progress and when Title IV federal student aid must be returned, students would be expected to interact weekly with the instructor during the scheduled seven-week block and complete the assessments in the one-credit modules by the end of the seven-week term. However, since they would have access to the course

content as soon as they registered, they could get started early. Even though students could begin their work early, actual interaction with the instructor would occur during the scheduled seven-week block, with the instructor reaching out to students on a weekly basis to explain course concepts and answer questions.

Offering self-paced, one-credit business and HR courses six times a year in each seven-week block might mean some online sections would be small. Therefore, compensation for instructors would be based on the number of students, not the number of classes. This is the way instructors at Loudon are currently compensated for directed studies. Since most of the Loudon faculty are adjunct instructors, they might be reluctant to do directed studies that involve only one or two students. However, if the instructors knew they would be scheduled for self-paced sections for an entire academic year that might be more desirable than having a regular class in only one or two academic terms. Because most adjunct instructors at Loudon are working full time in the disciplines in which teach, knowing they would consistently have online sections throughout the year would help them plan their schedules, even if they did not know the number of students each term. If too many students for one instructor enrolled in a particular block, an additional online section with another instructor could be added, as is the current practice at Loudon. Students would no longer have to worry about classes not being available when they wanted them. Furthermore, they would not have to wait for a new academic term to begin to start their coursework.

Although the one-credit HR and business modules do not include weekly assignments, instructors would be required to interact with each student on a weekly basis during the scheduled seven-week block to fulfill the federal student aid requirement for

regular and substantive interaction with faculty. Instructors might suggest interim due dates for components of the project to help ensure the self-paced students will meet the final deadlines. However, only the final projects would be graded, so self-paced students would not be penalized for missing an interim date. Instructors would document in the Loudon attendance system that an interaction with a student had taken place in a specific week. This is because Loudon uses those attendance records for federal student aid calculations, specifically for tracking satisfactory academic progress and determining when Title IV funds must be returned if students stop doing their coursework. By having an instructor interact with students weekly during the scheduled block, Loudon would avoid the issue raised by the Inspector General for the U.S. Department of Education that someone other than a faculty member had regular contact with students in some CBE programs (Howard, 2014). This would require adjunct instructors at Loudon to proactively reach out to online students to conduct mentoring sessions regarding the course content.

Under existing policies at Loudon University, undergraduates who want to complete their degrees quickly can register for up to nine credits in each seven-week block. If students discover they have tackled too much, they have until one week after a block begins to drop courses. To some extent, this allows the students to set their own pace for their studies. The approach described above for the one-credit HR and business modules would allow self-paced course start dates to be flexible, but end dates to be fixed, somewhat analogous to the CBE principle that exit, not entrance, criteria is important. The satisfactory academic progress requirement for federal student aid is focused on what is completed by the end of an academic term. Federal aid issues arise

when students do not make appropriate academic progress within a term, not when students complete their work faster.

It is recommended these one-credit online courses be offered as an option for students within the existing degree programs at Loudon, rather than as part of a new degree. Kentucky Community and Technical Colleges have offered similar, online courses that are smaller than the typical three-credit ones (Book, 2014; McCall, 2013). However, these courses are part of the "Learn on Demand" associate's degrees, not embedded in their traditional academic programs. The University of North Dakota has self-paced courses that can be started at any time, but these courses do not qualify for financial aid (UND, 2016). The University of Colorado Boulder offers self-paced courses that qualify for financial aid, if the student registers and completes the course in the same academic term (Colorado, n.d.). That approach is similar to the one recommended for Loudon. The "start anytime" online courses at Loudon would provide a new, convenient alternative for students within the traditional degrees and would be designed to meet the requirements for federal student aid. If students want to take some of these one-credit courses and some standard three-credit courses, they would be able to do so.

Before the advent of online learning, Loudon pioneered the seven-week block courses that met for an extended period just once a week. This made it easier for working adults to squeeze classes into their busy schedules. The "start anytime" online courses could be a new innovation for Loudon within its traditional degrees. Although this section described in detail how Loudon could implement "start anytime" online courses, similar approaches could be used at other universities with traditional degree programs.

On the other hand, if Loudon wants a separate CBE degree, the recommendations for that follow.

Determine Demand for CBE Degree

Loudon must provide three-year enrollment and cost projections as part of the CBE substantive change review for its regional accreditor. Loudon should assess the demand anyway to determine if an online, self-paced degree for HR Management is likely to be of interest to students. InsideTrack (2016) found 16 percent of post-traditional students in their sample were concerned that an online degree program would be designated as such on their diplomas. This apprehension was associated with online programs in general. Online, self-paced CBE programs could create additional wariness for post-traditional students in career-oriented degree programs who are particularly considered about employability. A study of nearly 500 companies across the United States in various industries indicated CBE was unfamiliar to most hiring managers (Franklin & Lytle, 2015). Therefore, it is unclear if employers will be as accepting of these self-paced degrees as they are of traditional degrees, since CBE programs are so new.

To help ensure acceptance by employers for their CBE degrees, Brandman University and the College for America at Southern New Hampshire University have partnerships with businesses whereby their employees can complete self-paced CBE programs knowing their employer will recognize and, in some cases, pay for the degree (Blumenstyk, 2016; Brandman University, 2016b). Loudon should work with employers to gain their understanding and seek their input regarding offering competency-based degrees. Employers could help Loudon to understand which disciplines have high unmet

demand for competent workers. Professions other than HR may be where companies have the most difficulty filling positions that require certain competencies.

Identify Alternative Sources of Funding

Paying for college may be a significant barrier for many students. At Loudon over 60 percent of the students receive federal grants and / or loans. The University could work more actively with businesses to encourage them to provide tuition reimbursement for their employees as an alternative or a supplement to federal student aid. By partnering with employers, Loudon and other institutions could find a new source of potential students. The College of Health Professions at Loudon already has some employer partnerships that might be leveraged to offer CBE as a new degree option for nursing students. Although the University's internal systems are not set up to handle non-term, borrow-based academic years, which is how federal student aid is typically administered for self-paced programs, the systems already accept periodic tuition reimbursement payments from employers. The regulations for federal student aid for self-paced programs are complicated. The tuition reimbursement payments from businesses could be negotiated in a way to work within the constraints of the current systems. In addition to potentially offering separate CBE degrees in disciplines such as HR and nursing, Loudon could include more competency-based learning within its existing degree programs, as discussed in the next subsection.

Embed Competencies in Traditional Degrees

Loudon could embed more workplace competencies into its traditional degree programs to better meet the needs of post-traditional students. Three of the principles of andragogy for adult learners are: (a) the learner's need to know, (b) a readiness to learn,

and (c) a motivation to learn (Knowles et al., 2011). Adults need to know why something is important to be learned and are generally ready to learn when they have a specific need to know something. Adults are more motivated to learn if the subject matter is relevant to them (Knowles et al., 2011). Tying coursework to the workplace competencies that students will need in their future careers is consistent with the three principles. To ensure degree programs incorporate workplace requirements, Loudon could work with employers to identify the competencies they seek. Another alternative is to build widely accepted competency models into the curriculum, whether that be a CBE or traditional program. At Loudon University, both the traditional and competency-based HR Management degrees are based on the SHRM competencies. The same approach could be taken for other degree programs if more professional organizations develop competency models for their disciplines.

Knowles et al. (2011) also stressed that adult learners want an education that includes real-world situations, not subjects compartmentalized into unrelated areas. This makes it easier for working students to apply what they have learned. As an example, the College for America at Southern New Hampshire University has incorporated workplace scenarios in its CBE programs (Clerkin & Simon, 2014). Likewise, the new competency-based assessments created for the CBE degree at Loudon are based on real-life situations and are built into the new one-credit HR and business courses. The curricula in other degree programs could include more competency-based assessments.

Where competency models do not exist, widely accepted professional certifications could be built into the curricula. Since not every student may seek to become certified, Loudon could offer certifications as an option, not a requirement. For

individuals who already have a college degree and just want a certification, the institution could work with the certifying bodies to offer the prep courses and certification exams at one of Loudon's 14 campus locations. This would draw more people to the campuses and might encourage some to take additional courses or to pursue graduate degrees. In a similar vein, SHRM has agreed to accept Loudon's one-credit HR courses as professional development credits. HR professionals, who are SHRM-certified, are required to accumulate professional development credits to maintain their certification (SHRM, 2016c). Other colleges at Loudon could work with professional associations to do the same.

Additional Research: Determine Why Lack of Interest in Competency-Based PLAs

Klein-Collins (2015) asserts PLAs are a pathway to CBE. Eduventures (2015) describes competency-based assessments of prior learning as one form of CBE. Although PLAs are not allowed in direct assessment programs, CAEL (2015) asserts they are acceptable in credit-based CBE. Loudon should confirm that with its regional accreditor. In any case, competency-based PLAs are permitted in traditional degree programs. However, very few students at Loudon take advantage of that option. Additional research at Loudon is needed to determine why. By better understanding the reasons competency-based PLAs are not more popular, the University may be able to design future competency-based degree programs that better meet the needs of post-traditional students. The rest of this subsection discusses issues with competency-based PLAs that may have implications for CBE in general.

Loudon University removed one of the barriers to PLAs when it began to offer a portfolio course that qualified for federal student aid and included one three-credit PLA

for free as part of the course. Normally, federal student aid cannot be used for the assessment of prior learning. However, two years after the new policy was implemented, less than one percent of the students at Loudon completed prior learning portfolio assessments. Loudon is not alone regarding the small amount of credit that is earned through PLAs. CAEL states on its LearningCounts website (learningcounts.org) that students on average earn only nine credits for assessments of prior learning portfolios.

There could be many reasons why so few students earn so little credit through prior learning portfolio assessments. For instance, at Loudon, students do not receive a letter grade when their portfolio is assessed—just a satisfactory / unsatisfactory grade. Normally, a letter grade is needed to transfer credits to another university, and Soares (2013) reported that post-traditional students, who are in the majority at Loudon, are likely to attend multiple institutions. A letter grade is often required for reimbursement by employers, if students work for companies that offer that benefit. Letter grades may also be mandated for admission to graduate school. CBE programs, like PLAs, often do not use grades, but instead indicate pass / incomplete for competencies on a transcript. Students may be reluctant to pursue options that do not result in letter grades on their transcripts.

It should be noted a slightly larger of number of students at Loudon earned credit by taking standardized exams, rather than through the assessments of prior learning portfolios. These exams are typically for the general education credits, not the specialized expertise in specific degree programs. Although the Loudon transcript does not show a letter grade for these standardized exams, students may feel more comfortable not having a grade on their transcripts for a general education course, like English 101;

they may be more reluctant to have transcripts without letter grades for the core courses in their field of study.

Another reason undergraduates at Loudon might be more likely to earn credit for prior learning through examinations rather than portfolio assessments is the cost of taking an exam to earn credit is much less than a portfolio analysis, even though federal student aid cannot be used to pay for the exams (Kelchen, 2015; Kelchen, 2016). In addition to the lower cost, an exam takes only a few hours, if the student already knows the material. On the other hand, putting together a prior learning portfolio can take weeks. Furthermore, if students have changed employers, they may no longer have access to the documentation they need for their portfolios. Finally, after doing all the work to put together a portfolio, there is no guarantee a student will get credit for it. If a student fails an external exam, there is no impact on the individual's transcript. However, if a student registers for a PLA and does not complete it, the Loudon transcript shows an unsatisfactory grade. Completing competency-based assessments in CBE could be even more time consuming than putting together a portfolio of prior learning, and Loudon needs to determine the impact on a student's transcript for CBE work that is not completed.

A barrier at Loudon to earning credit for prior learning portfolios is that the student's experiences must match up to the course content. A student might know five subjects in depth, but not know all the topics in any single course. Those five subjects might be split across multiple courses, each of which includes some additional topics not familiar to the student. Unless the student could demonstrate knowledge of most of the content in an individual course offered at Loudon, the student would not earn credit. The

undergraduate in the CBE pilot at Loudon ran into a similar problem. He was very familiar with HR issues in the United States, but did not have any international experience. Many of the SHRM competencies required international expertise. As noted earlier, smaller, one-credit courses improve the probably that a student's experience will match all the content in an individual course.

Even if students know all the course material, they may still shy away from PLAs. The *Wall Street Journal* provided a possible explanation; the *Journal* has advocated undergraduates to seek an "easy A," if they aspire to be accepted at a top graduate business school in the future (Korn, 2013). In other cases, serious students with relevant work experience might take a course as a refresher or to fill in gaps in their knowledge, especially if their prior experience regarding the subject matter occurred several years earlier. In self-paced CBE programs, even though students can skip the learning modules before tackling assessments, they may not choose to do so. That may mitigate an individual's ability to complete self-paced programs faster than traditional ones. Furthermore, if letter grades are not given in CBE programs, students might prefer to take a traditional course to get an "easy A."

Another reason more students do not take advantage of competency-based PLAs may be they do not know they have that option. Although Loudon explains PLAs on its website, and the academic advisors present that option to students, many undergraduates register for classes on their own without speaking to an advisor. Students count on the "My Degree" program in the registration system to tell them what courses are required to complete their degrees. PLAs are not listed as an option in the "My Degree" software. If Loudon decides to offer competency-based degrees as a new option, it will be important

for students to know about that alternative. However, the Education Advisory Board recommends institutions not use the term CBE in communications with students (EAB, 2015). Since the term is not well understood, the Board suggests communicating the desirable aspects of CBE, such as the flexibility self-paced programs offer. Loudon will need to ensure students understand the difference between self-paced CBE and traditional classes that have fixed due dates for assignments. Otherwise, students may assume assignments in traditional classes can be completed at any time. Even in the "start anytime" online courses described above, student work must be submitted by the end of an academic term.

Prior to the policy changes the Loudon Faculty Senate approved in February 2016, undergraduates could transfer in up to 75 credits, but could earn only 15 credits for the assessment of prior learning portfolios. Undergraduates can now earn up to 75 credits for either transfer credits or PLAs. However, to date, very few students have earned 15 credits for assessments of prior learning portfolios, so it is unclear if the policy change will have much impact. Additional research is needed to determine why so few students complete assessments of prior learning. If the barriers to competency-based PLAs could be understood and mitigated, more post-traditional students with relevant work experience could complete their degrees faster. Furthermore, some of the reasons students do not pursue competency-based PLAs could provide insights into how future competency-based programs could be designed to better meet the needs of post-traditional students.

Limitations

A major limitation of this research is it involves a single, private university with a unique operating model—the faculty is comprised primarily of adjunct instructors who work full time in the disciplines they teach. Grant et al. (1979) found faculty were often reluctant to accept CBE. The change management issues that occurred at institutions with large tenured staffs did not apply to Loudon where tenure is not an option and over 90% of the faculty are adjunct instructors. In addition, the student body at Loudon is atypical—most undergraduates are already working and attend on a part-time basis. Unlike universities with traditional student bodies, Loudon has had experience serving post-traditional students. For instance, the University knows post-traditional students are likely to attend multiple institutions, so Loudon makes it easy to transfer in credit from other colleges. Although the emphasis on career competencies in CBE fits Loudon's focus on career-oriented degrees, implementing the competency-based initiative was harder than the University had anticipated. For more traditional universities, CBE may be an even more radical change.

Since this study spanned a three-year timeframe, in some cases the memories of the participants began to fade regarding early decisions that had been made. The researcher had been a participant-observer in some initial CBE meetings, but not in the later sessions. To overcome this limitation, the researcher used the archived documentation to ask questions that would spark recollections, and then used the documentation to cross-check the interviews. Another limitation was personnel turnover—the instructional designer who had created all the CBE modules left Loudon University, so her supervisor was interviewed for this research. However, he had not

been as close to the details as the instructional designer had been and could not explain some of the decisions in the design and redesign of the CBE modules in Blackboard. Although, the researcher was given access to the final version of the Blackboard modules, the earlier iterations of the CBE content in Blackboard were no longer available.

An important limitation involved the regulatory environment. When the case study began in 2013, the U.S. Department of Education equated CBE with direct assessment programs (IFAP, 2013a). Then, in 2014, the Department acknowledged there were two forms of CBE: one using direct assessments and the other retaining clock or credit hours (IFAP, 2014). In 2015, C-RAC stated CBE programs could be direct assessment, credit-based, or a hybrid of the two (Council of Regional Accrediting Commissions, 2015). Shortly after the C-RAC announcement, the U.S. Department of Education acknowledged the models of CBE were still evolving (Bounds, 2015). As the regulatory environment continues to change, postsecondary institutions may have CBE options that did not exist when this study was conducted. For instance, hybrid CBE designs combining credit hour and direct assessment approaches were not allowed before the C-RAC announcement in 2015 (Council of Regional Accrediting Commissions, 2015). The federal government is also experimenting with other CBE models (U.S. Department of Education, 2015b). Some of the decisions reported in the findings for this research may no longer be relevant to other universities, if regulators allow new CBE options.

A limitation of any case study is the results may not be generalizable (Merriam, 1998). This study spanned a three-year time period, but involved a single university. It

was not intended to be a comprehensive overview of CBE in general. The purpose of the study was to understand the decisions made by a private, nonprofit university regarding the design of a CBE program intended for post-traditional students. Many of the decisions were influenced by the mission and the internal policies and economics that were part of Loudon's operating model. Other universities may have very different operating models that would result in different design decisions.

Summary

This research focused on the problem of offering alternative approaches, such as self-paced, competency-based programs, to enable working adults to fit education into their busy lives to enhance their career opportunities. The case study provided a richly detailed description of the design decisions that other institutions may find useful as they create their own solutions for post-traditional students. The magnitude of the problem is large—nearly a third of U.S. undergraduates are post-traditional students over 24 years old (National Center for Education Statistics, 2015). However, post-traditional students are less likely than traditional ones to earn a bachelor's degree (Shapiro et al., 2015), because the former often attend college part time and other priorities involving work and families may compete with their educational goals (Soares, 2013). Although this research was limited to a single university, the regulatory environment for self-paced, competency-based programs in higher education may be a barrier for any postsecondary institution. Furthermore, like Loudon, other institutions have discovered their existing information systems were not designed for self-paced programs (Hurst, 2013; Nodine & Johnstone, 2015; Public Agenda, 2015). In addition, as the Education Advisory Board has warned, colleges should not assume students and employers are interested in CBE

(EAB, 2015). Instead of entire self-paced degrees, this research suggests "start anytime" online courses could be incorporated into traditional degrees and enable an element of self-pacing for students. Moreover, certifications from professional organizations and progressive credentialing from universities could provide additional career-oriented options for working adults. Additional research into why so few students with relevant work experience complete competency-based PLAs could provide insights into how to design CBE programs that appeal to students.

Unfortunately, the United States trails other countries regarding college attainment rates for post-traditional students (OECD, 2016). This could put our country at a competitive disadvantage globally. Self-paced CBE might be one solution, but not the only one, by which more post-traditional students could earn a college degree. It is in the best interest of our nation to find convenient, flexible higher education options that enable post-traditional students to complete their education and to more fully contribute to our society and our future.

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Appendix A: Definition of Terms

Andragogy

The term andragogy refers to adult learning instead of pedagogy, which is "a term derived from the Greek words paid (meaning 'child') and agogus (meaning 'leading')" (Knowles, 1970, p. 40). Andragogy is derived from the Greek word anēr, meaning adult (Knowles, 1970).

Credit Hour

The U.S. Department of Education (IFAP, 2015) provided the following credit-hour definition for CBE, based on a typical 15-week semester:

> A credit hour in a CBE program might not require structured class sessions but must still require sufficient academic activity—for instance, reading and writing assignments with feedback from an instructor—to reasonably approximate three hours of expected academic engagement per week for each credit hour. The CBE program could allow this work to be completed more flexibly and at the student's pace as long as he is making satisfactory academic progress. (p. 2-24)

Competency

The National Postsecondary Education Cooperative, sponsored by the U.S. Department of Education, states: "A competency is a combination of skills, abilities, and knowledge needed to perform a specific task in a given context" (Jones & Voorhees, 2002, p. 1). The U.S. Office of Personnel Management (OPM, n.d.) describes the components of competencies as follows:

> Knowledge is a body of information applied directly to the performance of a function. Skill is an observable competence to perform a learned psychomotor act. Ability is competence to perform an observable behavior or a behavior that results in an observable product. (para. 13)

Competencies extend beyond what individuals know to include what they can do with that knowledge and how they do it.

Direct Assessment

The U.S. Department of Education defines direct assessment as "an instructional program that, in lieu of credit hours or clock hours as a measure of student learning, utilizes direct assessment of student learning, or recognizes the direct assessment of student learning by others" (Electronic Code of Federal Regulations, 2014, para. 1). Transferring credits from other colleges or awarding credit for prior learning is not allowed when direct assessments are used instead of credit hours (Council of Regional Accrediting Commissions, 2015; IFAP, 2013a). Klein-Collins (2013) described direct assessment as a way to implement CBE where degree programs were completely redesigned around competency-based assessments. However, most CBE programs use some sort of credit hour equivalency, rather than direct assessment, to qualify for federal student aid (Book, 2014).

Nontraditional Student

The National Center for Education Statistics defines nontraditional undergraduates as having at least one of seven characteristics: "financial independence, part-time attendance, delayed enrollment, full-time work, dependents, single parenthood, and lack of a high school diploma" (Choy, 2002, p. 32). Traditional undergraduates—those who enroll full time in college immediately after finishing high school, do not have full-time jobs, and are supported financially by their parents—were fewer than half of the total

undergraduates in 2013 (National Center for Education Statistics, 2015). Post-traditional students, defined below, are a subset of nontraditional students.

Open Access / Open Admissions / Open Enrollment

If institutions offer open access (also called open admissions or open enrollment), students can enroll in a postsecondary program if they have a high school diploma or a General Educational Development (GED) certificate; entrance exams like the American College Testing (ACT) exam and the Scholastic Assessment Test (SAT) are not required for acceptance. Many competency-based programs are open enrollment because in CBE the exit, not entrance, criteria are important (Elam, 1971). After enrollment, however, standardized tests may be used to place students or to determine if they need remedial assistance. Open enrollment does not necessarily mean students can start their programs at any time; they may still have to wait for a term or enrollment period to begin.

Personalized / Individualized Learning

CBE that is self-paced is sometimes called personalized or individualized learning because students have individualized learning plans that specify the sequence of the material they plan to learn in specific time periods (U.S. Department of Education, n.d.). Students can determine when, where, and how fast they want to complete the content. However, as Schmieder (1973) pointed out, what a student is required to master is typically fixed, not individualized.

Post-Traditional Student

The American Council on Education defines post-traditional learners as students and potential students aged 25 to 64 who have not earned a postsecondary

credential (Soares, 2013). In this research, post-traditional students are defined as those learners over 24 years old who are enrolled as undergraduates. This includes individuals who delayed entering college and those who started college, left, and have now returned to earn an associate's or bachelor's degree. Of the nearly five and a half million post-traditional undergraduates in 2013, almost half (46 percent) were attending two-year public institutions; only 11 percent attended four-year, private, nonprofit colleges. More than half (59 percent) of post-traditional students went to college part time (National Center for Education Statistics, 2015). Because the term post-traditional is a newly defined subset of nontraditional students (Soares, 2013), much of the literature refers to these individuals as adult students.

Appendix B: Interview Protocol

The participants were clearly informed of the purpose of the research and that the interview would be recorded; they were free to choose not to participate or to opt out at any time. In addition, they could ask for certain comments to be "off the record," in which case, those remarks were deleted from the transcript. The transcripts of the interviews included a code that was separately matched to the participant's name, position, and the date, time, and location of the interview. The following questions were used as a general interview guide:

- Please describe your current role in relation to the development and implementation of the CBE program.
- How do you define success for the new program and how would you measure success?
- What decisions about the design of the new program do you think will be key to its success? Why do you think those decisions are key? In other words, how do they contribute to success as you define it?
- How are decisions about the program determined? For instance, did you seek information from certain sources? Draw me a picture of the process for decision-making in this program.
- How did the requirements for accreditation or federal student aid impact your decisions?
- How did the standardized requirements for entry into a profession affect your decisions?

- What other approaches, if any, did you consider and decide against, and why?
- What decisions, if any, did you make that you modified later, and why?
- What decisions are you concerned about whether you made the right choice or not? Why are you concerned about the choice you made?